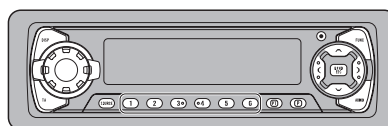


Service Manual

Pioneer



ORDER NO.
CRT2466

MULTI-CD CONTROL HIGH POWER CD PLAYER WITH RDS TUNER

DEH-P5100R **X1N/EW**

DEH-P5100R-W **X1NEW**

DEH-P5100R-B **X1NEW**

● This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-958	CRT2423	S8.1	CD Mech. Module:Circuit Description, Mech. Description, Disassembly

CONTENTS

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		8. OPERATIONS AND SPECIFICATIONS.....	65

PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER EUROPE N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

● CD Player Service Precautions

1. For pickup unit(CXX1285) handling, please refer to "Disassembly"(see page 53)
During replacement, handling precautions shall be taken to prevent an electrostatic discharge(protection by a short pin).
2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.
3. Please checking the grating after changing the service pickup unit(see page 47).

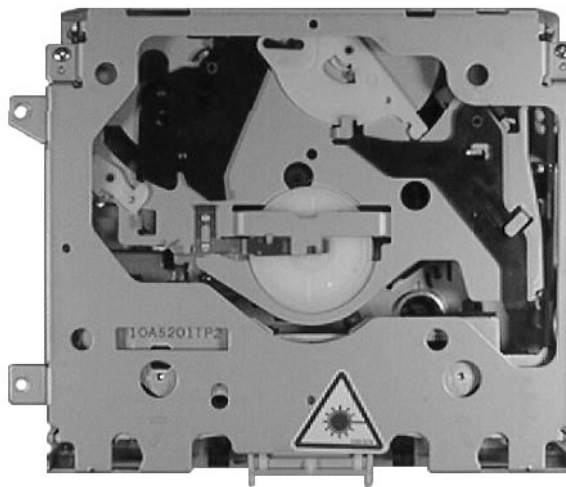
1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

1. Safety Precautions for those who Service this Unit.
 - When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

Caution:

1. During repair or tests, minimum distance of 13cm from the focus lens must be kept.
2. During repair or tests, do not view laser beam for 10 seconds or longer.
2. A "CLASS 1 LASER PRODUCT" label is affixed to the bottom of the player.
3. The triangular label is attached to the mechanism unit frame.



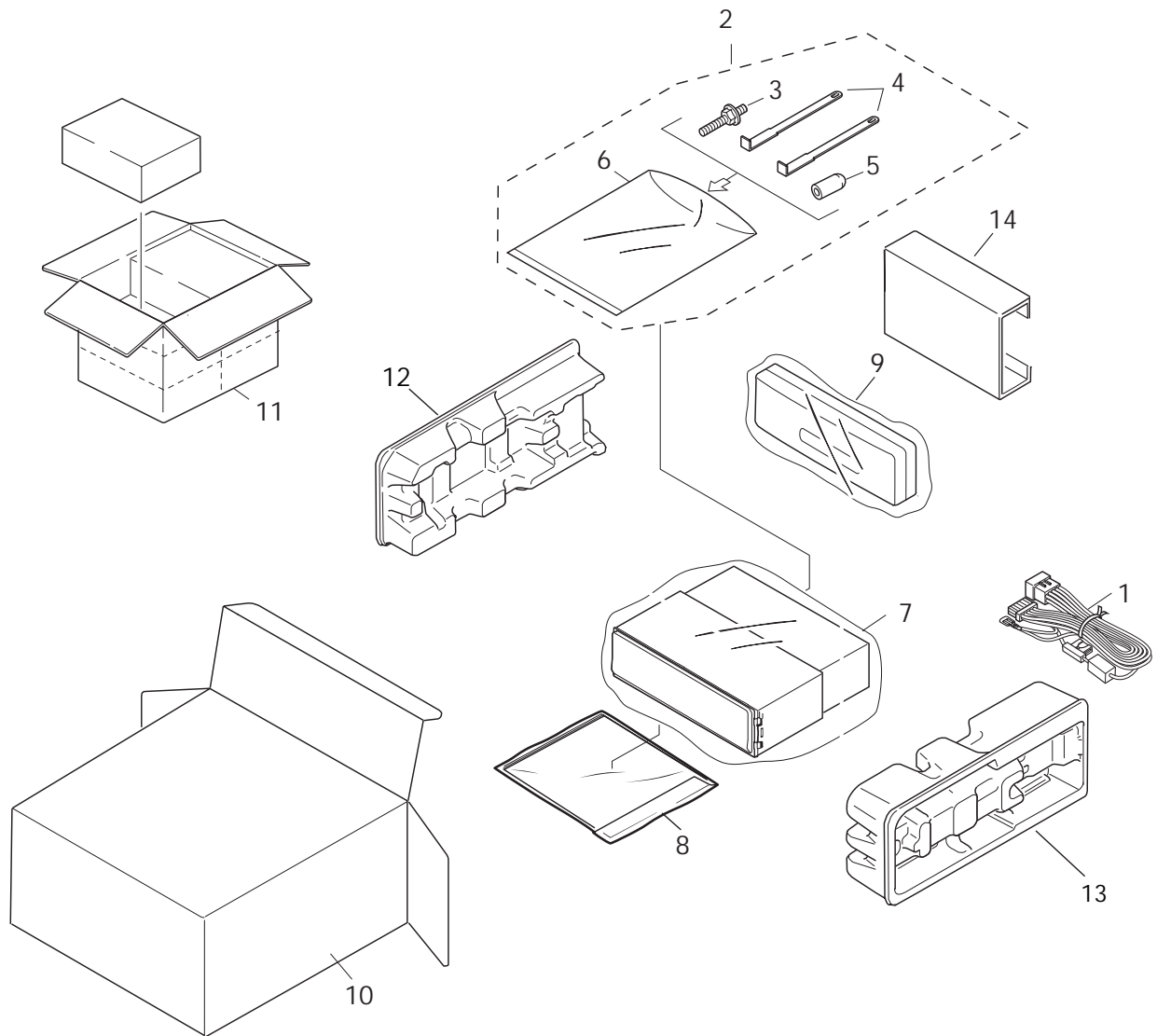
4. Specifications of Laser Diode

Specifications of laser radiation fields to which human access is possible during service.

Wavelength = 800 nanometers

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

(1) PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Cord Assy	CDE6240		8-4	Owner's Manual	CRD3148
*	2	Accessory Assy	CEA2397		8-5	Installation Manual	CRD3149
	3	Screw	CBA1002	*	8-6	Passport	CRY1013
	4	Handle	CNC5395	*	8-7	Warranty Card	CRY1157
	5	Bush	CNV3930		9	Case Assy	CXB3520
*	6	Polyethylene Bag	E36-615		10	Carton	See Contrast table(2)
	7	Polyethylene Bag	CEG-162		11	Contain Box	See Contrast table(2)
	8-1	Polyethylene Bag	CEG1116		12	Protector	CHP2251
	8-2	Owner's Manual	CRD3146		13	Protector	CHP2252
	8-3	Owner's Manual	CRD3147		14	Inner Box	CHW1754

DEH-P5100R,P5100R-W,P5100R-B

(2) CONTRAST TABLE

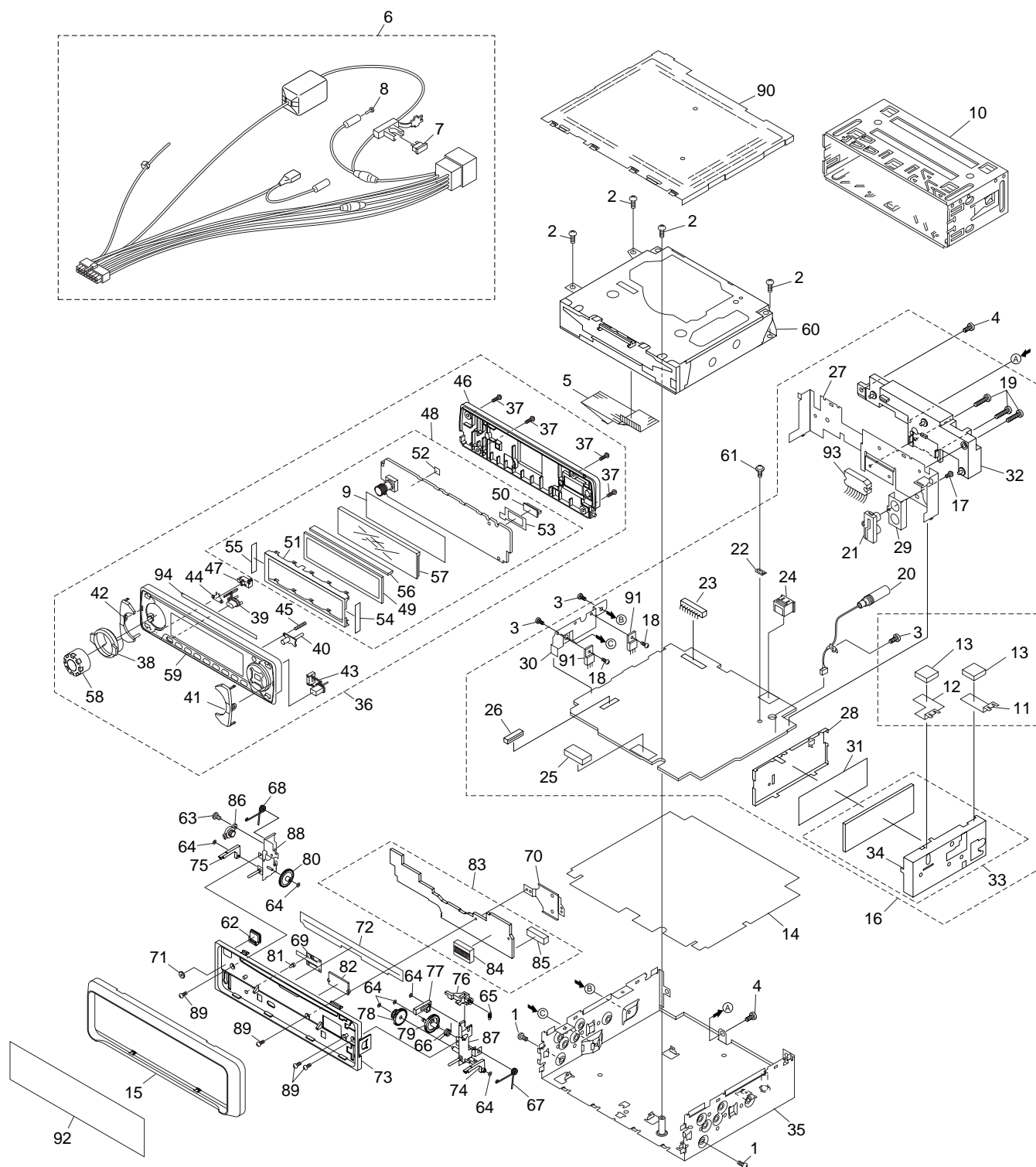
DEH-P5100R/X1N/EW, DEH-P5100R-W/X1NEW and DEH-P5100R-B/X1NEW are constructed the same except for the following:

Mark No.	Symbol and Description	Part No.		
		DEH-P5100R/X1N/EW	DEH-P5100R-W/X1NEW	DEH-P5100R-B/X1NEW
10	Carton	CHG4001	CHG4002	CHG4003
11	Contain Box	CHL4001	CHL4002	CHL4003

● Owner's Manual, Installation Manual

Model	Part No.	Language
DEH-P5100R/X1N/EW	CRD3146	English, Spanish
DEH-P5100R-W/X1NEW	CRD3147	German, French
DEH-P5100R-B/X1NEW	CRD3148	Italian, Dutch
	CRD3149	English, Spanish, German, French, Italian, Dutch

2.2 EXTERIOR



(1) EXTERIOR SECTION PARTS LIST

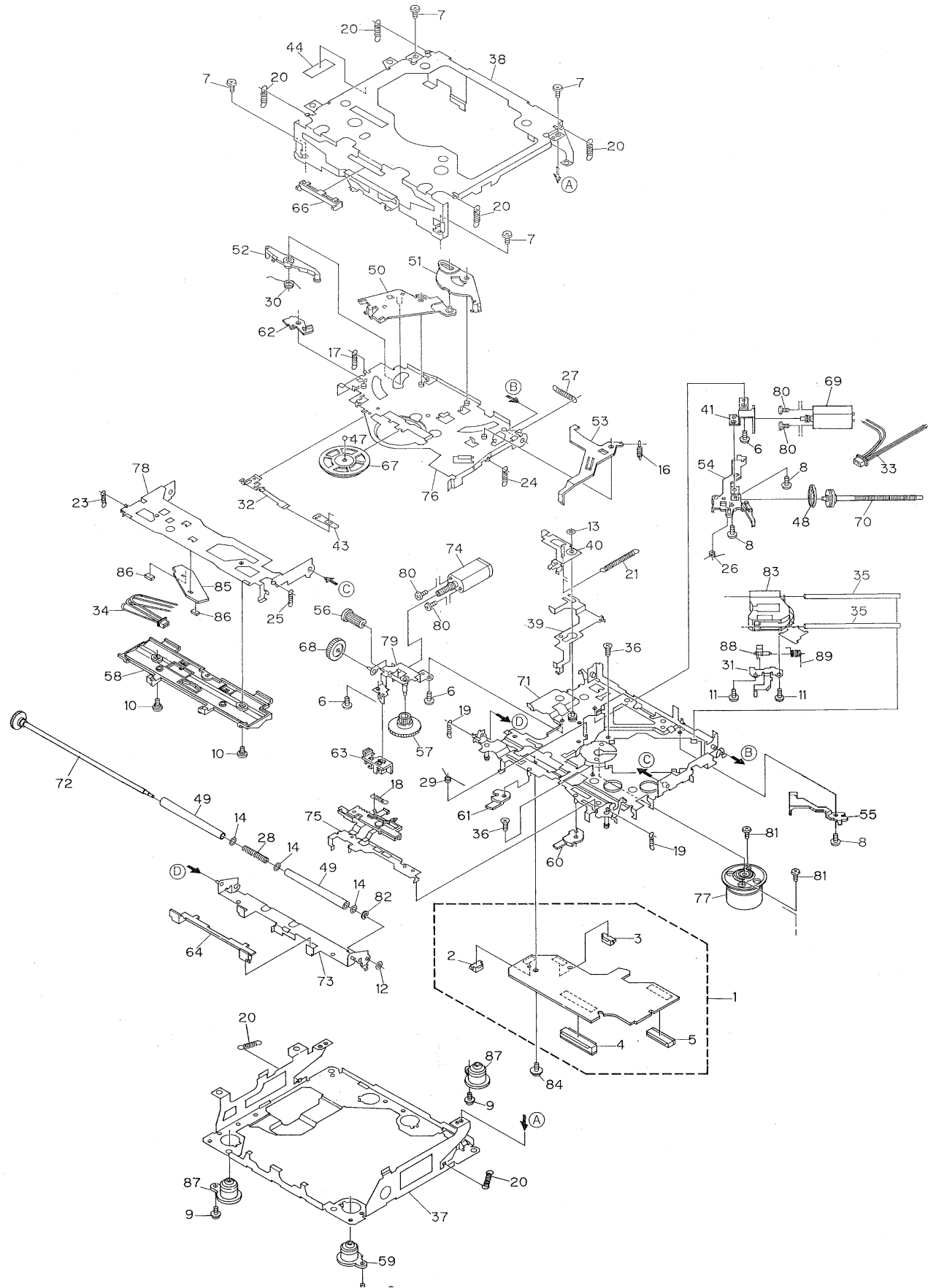
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BMZ30P040FZK	51	Holder	CNC8562
2	Screw	BSZ26P060FMC	52	Spacer	CNM6710
3	Screw	BSZ30P060FMC	53	Spacer	CNM6711
4	Screw	BSZ30P100FMC	54	Spacer	CNM6733
5	Cable	CDE6160	55	Spacer	CNM6734
6	Cord Assy	CDE6240	56	Connector	CNV5990
7	Fuse(10A)	CEK1136	57	Lighting Conductor	CNV6001
8	Cap	CKX-003	58	Knob Unit	CXB5350
9	Sheet	See Contrast table(2)	59	Grille Unit	See Contrast table(2)
10	Holder	CNC6798	60	CD Mechanism Module(S8.1)	CXK5201
11	Holder	CNC8300	61	Screw	ISS26P055FUC
12	Holder	CNC8357	62	Button(EJECT)	CAC6428
13	Spacer	CNM6482	63	Screw(M2x2)	CBA1176
14	Insulator	CNM6606	64	Washer	CBF1038
15	Panel	See Contrast table(2)	65	Spring	CBH2310
16	Tuner Amp Unit	See Contrast table(2)	66	Spring	CBH2393
17	Screw	BPZ26P060FMC	67	Spring	CBH2312
18	Screw	BSZ26P060FMC	68	Spring	CBH2313
19	Screw	BSZ26P160FMC	69	Spring	CBL1492
20	Antenna Cable(CN502)	CDH1254	70	Holder	CNC8616
21	Pin Jack(CN431)	CKB1028	71	Cushion	CNM5486
22	Terminal(CN501)	CKF1059	72	Cover	CNM6854
23	Plug(CN952)	CKM1294	73	Panel	CNS5791
24	Connector(CN411)	CKS3408	74	Arm	CNV5991
25	Plug(CN651)	CKS3537	75	Arm	CNV5992
26	Connector(CN681)	CKS3838	76	Arm	CNV5993
27	Panel	CNB2477	77	Lever	CNV5994
28	Holder	CNC7533	78	Gear	CNV5995
29	Holder	CNC8298	79	Gear	CNV5996
30	Holder	CNC8615	80	Gear	CNV5997
31	Insulator	CNM5967	81	Pin	CNV6027
32	Heat Sink	CNR1550	82	Lighting Conductor	CNV6069
33	FM/AM Tuner Unit	CWE1500	83	Panel PCB Unit	CWM7157
34	Holder	CNC7532	84	Socket(CN902)	CKS3550
35	Chassis Unit	See Contrast table(2)	85	Connector(CN903)	CKS4206
36	Detach Grille Assy	See Contrast table(2)	86	Damper Unit	CXB5070
37	Screw	BPZ20P100FZK	87	Holder Unit	CXB5736
38	Knob	CAA1525	88	Holder Unit	CXB5737
39	Button(SOURCE)	CAC6331	89	Screw	IMS20P045FZK
40	Button(OPEN)	CAC6333	90	Case Unit	CXB5788
41	Button(F,A)	CAC6337	91	Transistor(Q954,Q991)	2SD2396
42	Button(DISP)	CAC6339	92	Cover	See Contrast table(2)
43	Button(BAND)	CAC6442	93	IC(IC551)	PAL005A
44	Spring	CBH2316	94	Spacer	CNM6871
45	Spring	CBH2320			
46	Cover	See Contrast table(2)			
47	Holder	CNV6177			
48	Keyboard Unit	See Contrast table(2)			
49	LCD(LCD901)	See Contrast table(2)			
50	Connector(CN901)	CKS4205			

(2) CONTRAST TABLE

DEH-P5100R/X1N/EW, DEH-P5100R-W/X1NEW and DEH-P5100R-B/X1NEW are constructed the same except for the following:

Mark No.	Symbol and Description	Part No.		
		DEH-P5100R/X1N/EW	DEH-P5100R-W/X1NEW	DEH-P5100R-B/X1NEW
9	Sheet	Not used	Not used	CNM6796
15	Panel	CNS5992	CNS5913	CNS5992
16	Tuner Amp Unit	CWM6897	CWM6898	CWM6899
35	Chassis Unit	CXB5062	CXB5493	CXB5494
36	Detach Grille Assy	CXB4911	CXB4912	CXB4913
46	Cover	CNS5737	CNS5912	CNS5737
48	Keyboard Unit	CWM6906	CWM6910	CWM6907
49	LCD(LCD901)	CAW1566	CAW1573	CAW1601
59	Grille Unit	CXB5375	CXB5376	CXB5377
92	Cover	Not used	CNM4710	Not used

2.3 CD MECHANISM MODULE



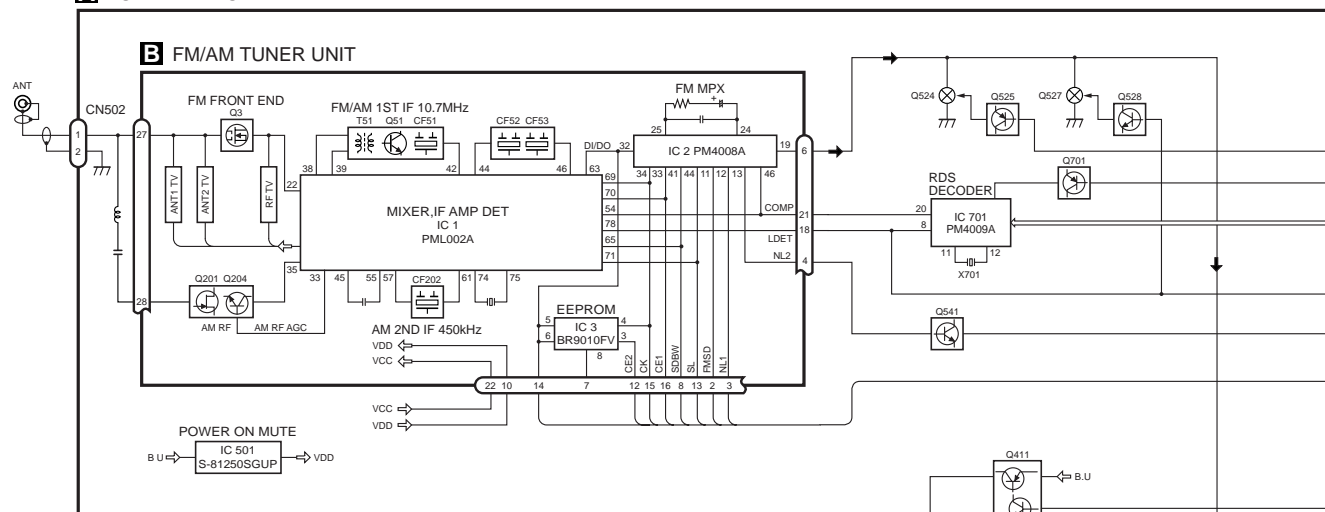
● CD MECHANISM MODULE SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Control Unit	CWX2411	46	.....
2	Connector(CN802)	CKS2192	47	Ball	CNR1189
3	Connector(CN801)	CKS2193	48	Belt	CNT1086
4	Connector(CN701)	CKS2773	49	Roller	CNV4509
5	Connector(CN101)	CKS3486	50	Arm	CNV6037
6	Screw	BMZ20P030FMC	51	Arm	CNV5247
7	Screw	BSZ20P040FMC	52	Arm	CNV5248
8	Screw(M2x3)	CBA1077	53	Arm	CNV5249
9	Screw(M2x5)	EBA1028	54	Guide	CNV5254
10	Screw	CBA1243	55	Guide	CNV5255
11	Screw(M2x4)	CBA1362	56	Gear	CNV5257
12	Washer	CBF1037	57	Gear	CNV5256
13	Washer	CBF1038	58	Guide	CNV6272
14	Washer	CBF1060	59	Damper	CNV6010
15	.....		60	Arm	CNV6096
16	Spring	CBH2079	61	Arm	CNV6031
17	Spring	CBH2117	62	Arm	CNV6211
18	Spring	CBH2314	63	Guide	CNV6012
19	Spring	CBH2110	64	Guide	CNV5510
20	Spring	CBH2282	65	.....
21	Spring	CBH2318	66	Guide	CNV5751
22	.....		67	Clamper	CNV6013
23	Spring	CBH2324	68	Gear	CNV5813
24	Spring	CBH2118	69	Motor Unit(M1)	CXB2190
25	Spring	CBH2161	70	Screw Unit	CXB5892
26	Spring	CBH2163	71	Chassis Unit	CXB4797
27	Spring	CBH2189	72	Gear Unit	CXB4728
28	Spring	CBH2377	73	Arm Unit	CXB5753
29	Spring	CBH2260	74	Motor Unit(M2)	CXB2195
30	Spring	CBH2262	75	Lever Unit	CXB4730
31	Bracket	CNC8568	76	Arm Unit	CXB4731
32	Spring	CBL1369	77	Motor Unit(M3)	CXB2562
33	Connector	CDE5531	78	Arm Unit	CXB4732
34	Connector	CDE5532	79	Bracket Unit	CXB4795
35	Shaft	CLA3304	80	Screw	JFZ20P025FMC
36	Screw(M2.6x6)	CBA1458	81	Screw	JGZ17P025FZK
37	Frame	CNC8565	82	Washer	YE20FUC
38	Frame	CNC8749	83	Pickup Unit(Service)(P8)	CXX1285
39	Lever	CNC7546	84	Screw	IMS26P030FMC
40	Arm	CNC8663	85	PCB	CNX2982
41	Bracket	CNC8567	86	Photo-transistor(Q1, 2)	CPT230SX-TU
42	.....		87	Damper	CNV6011
43	Spacer	CNM3315	88	Rack	CNV6014
44	Sheet	CNM6659	89	Spring	CBH2315
45	.....			

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

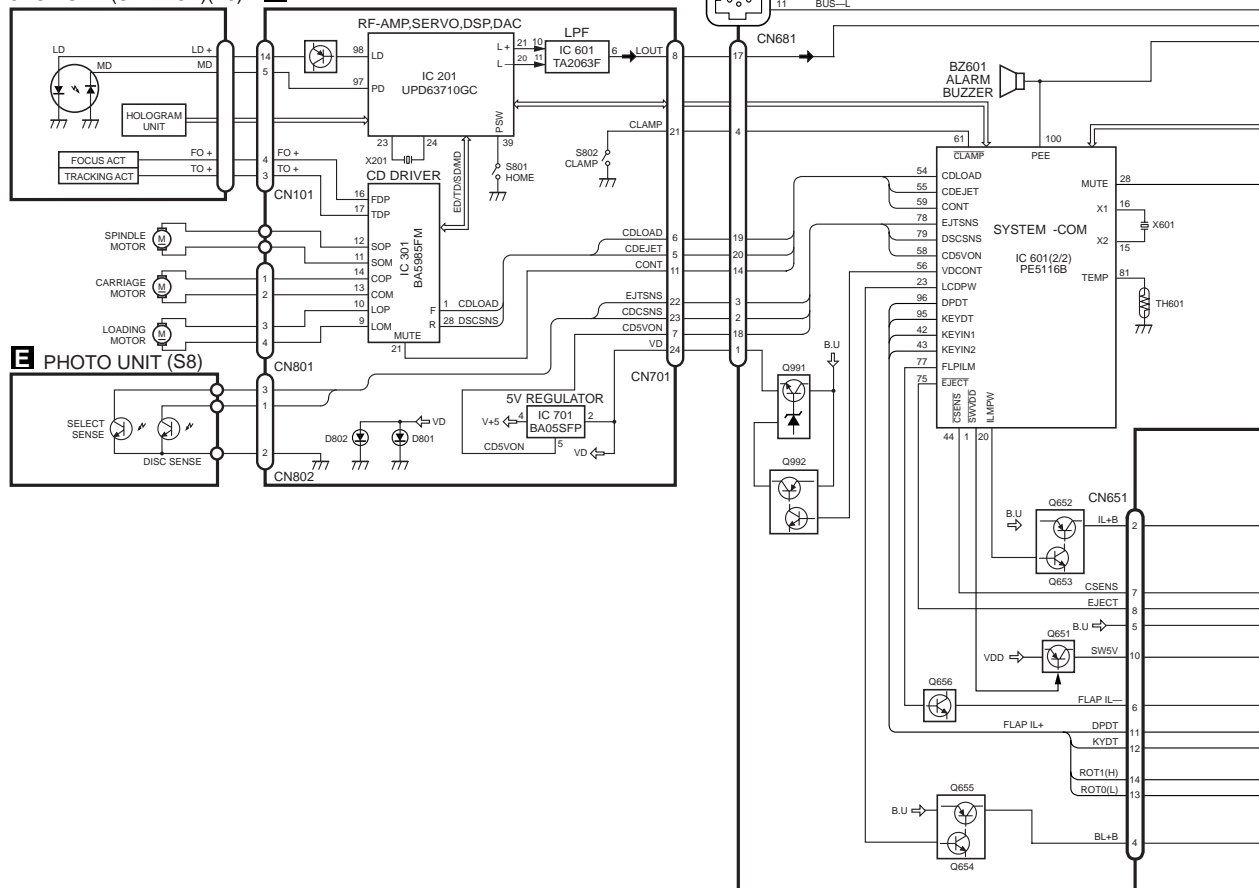
3.1 BLOCK DIAGRAM

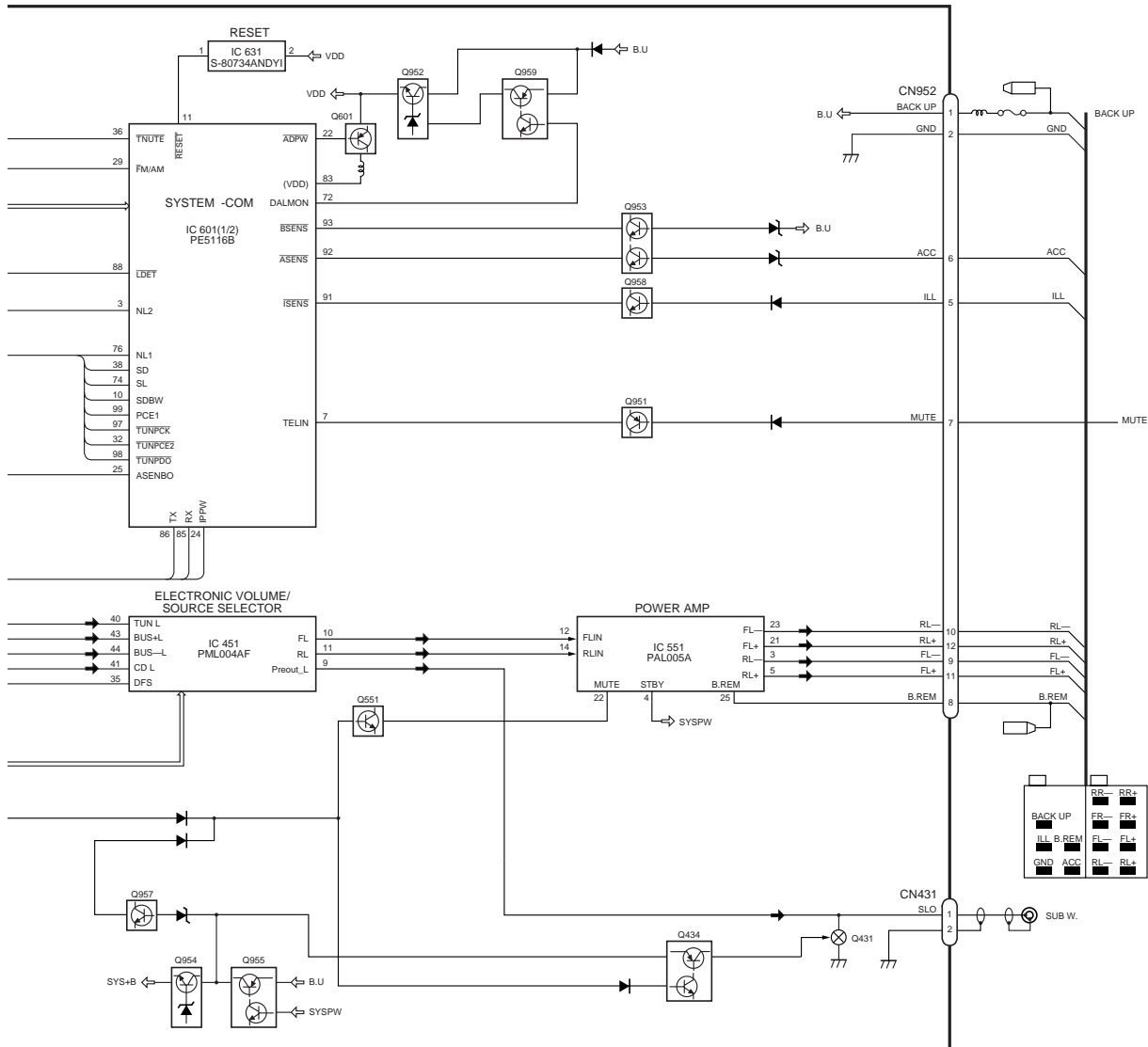
A TUNER AMP UNIT



PICKUP UNIT(SERVICE)(P8)

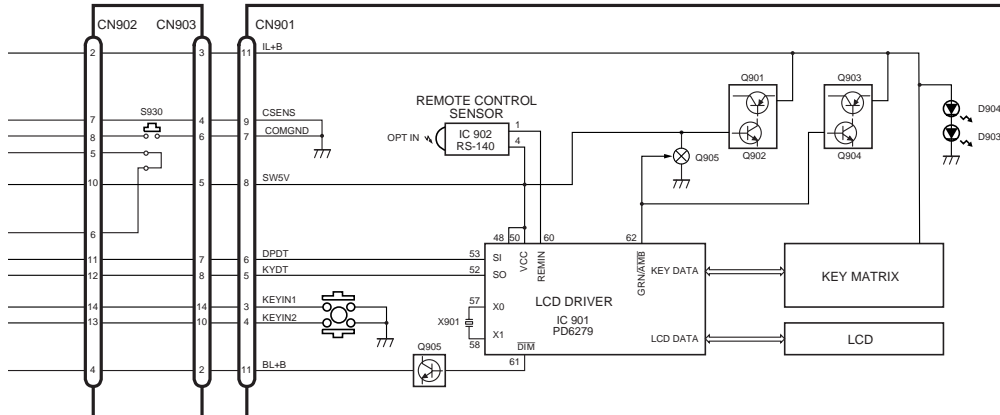
D CONTROL UNIT





F PANEL PCB UNIT

C KEYBOARD UNIT

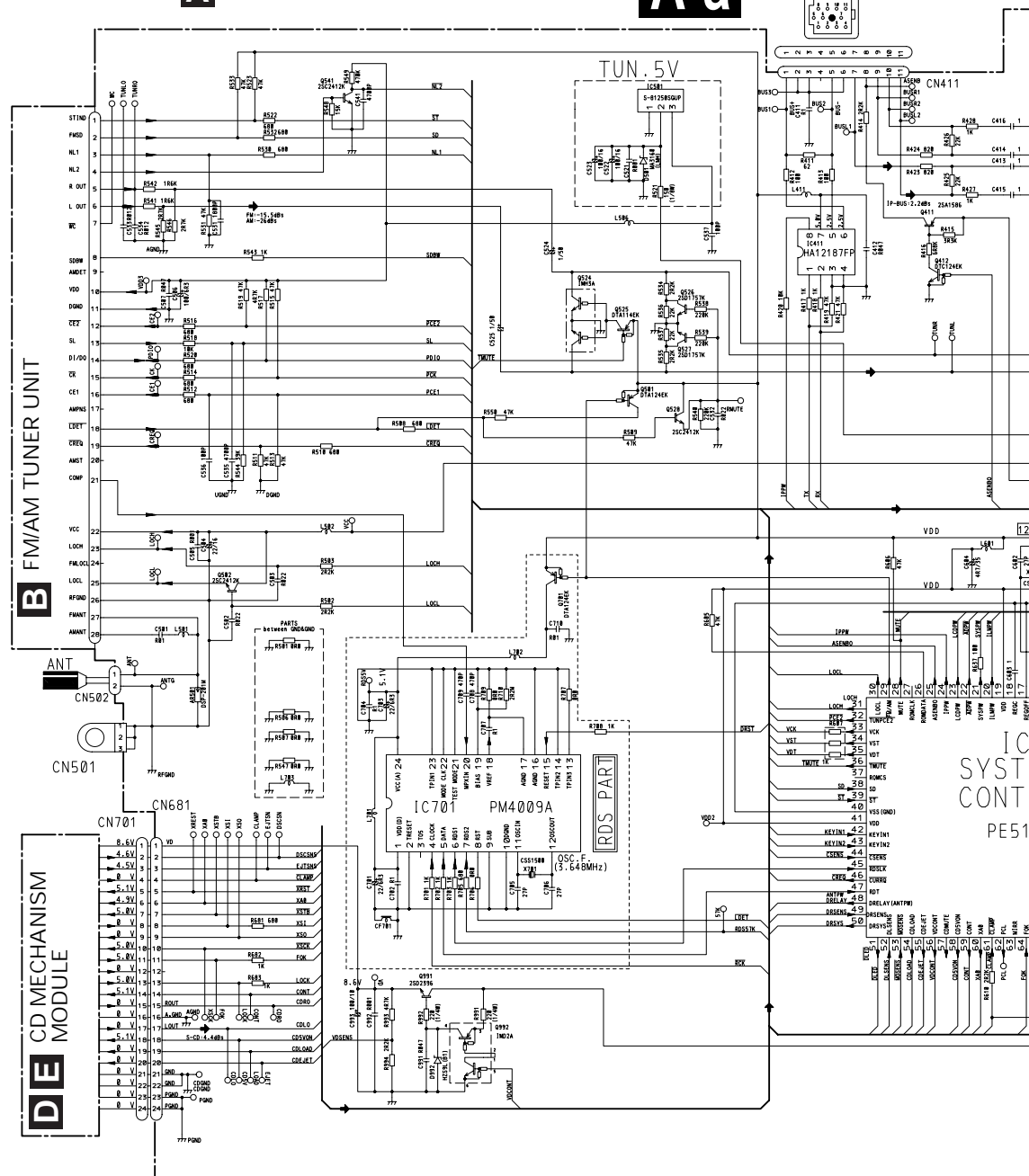


3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to “EXPLODED VIEWS AND PARTS LIST” or “ELECTRICAL PARTS LIST”.

A TUNER AMP UNIT

A-a

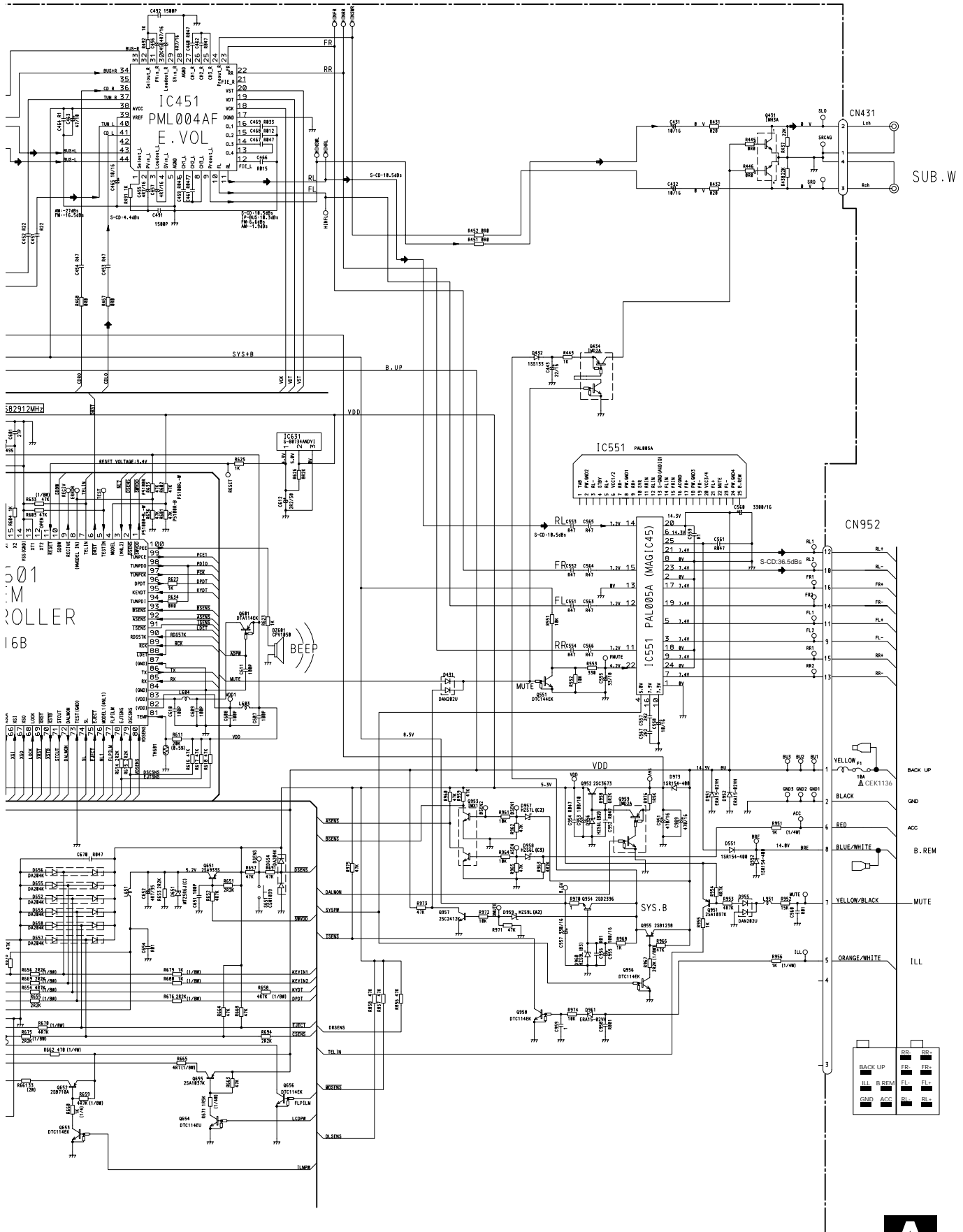


NOTE:
□ Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
—|— Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

C KEYBOARD UNIT

F PANEL PCB UNIT

A-b



A

A

B

C

D

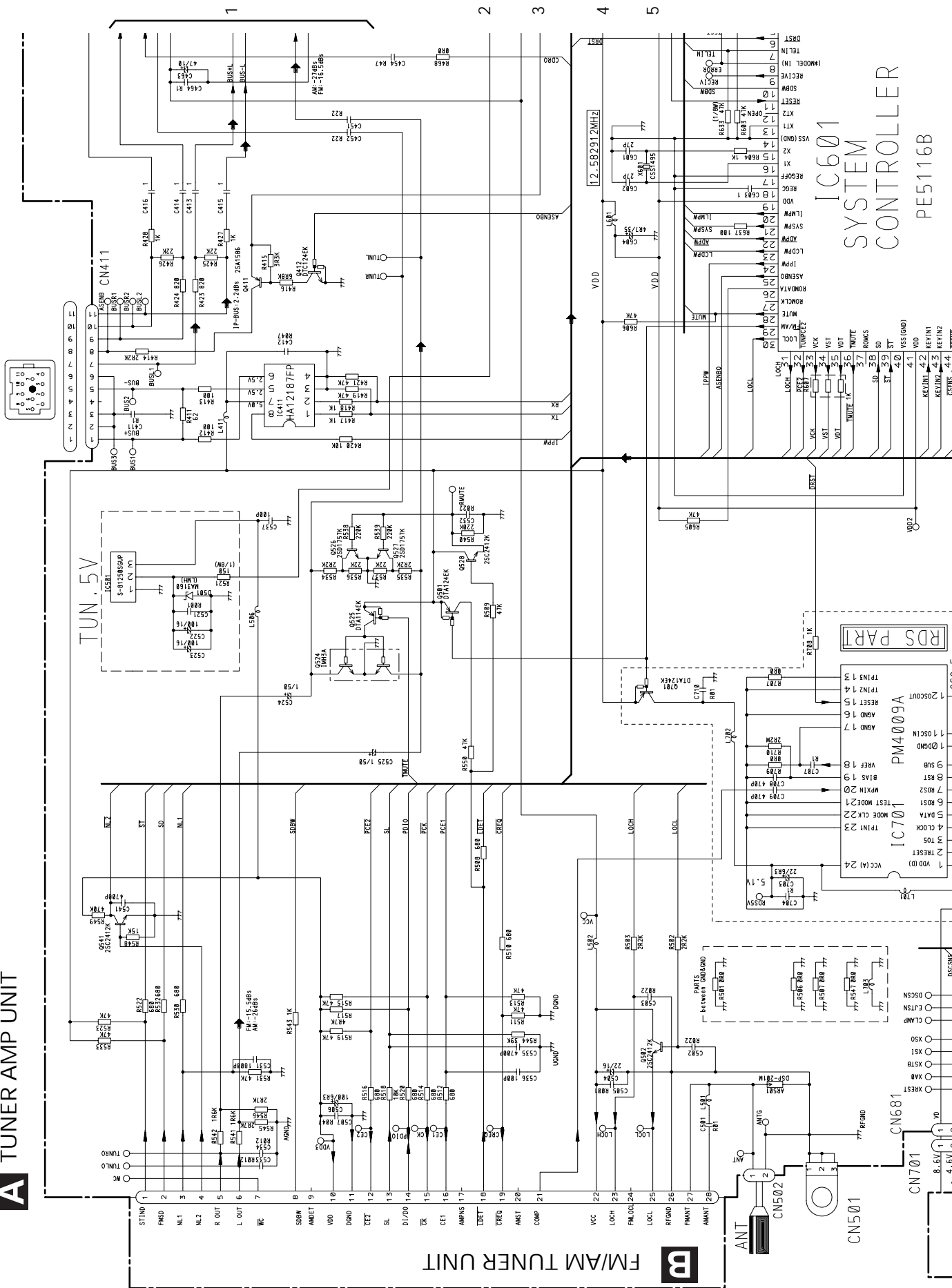
A-a
A-b

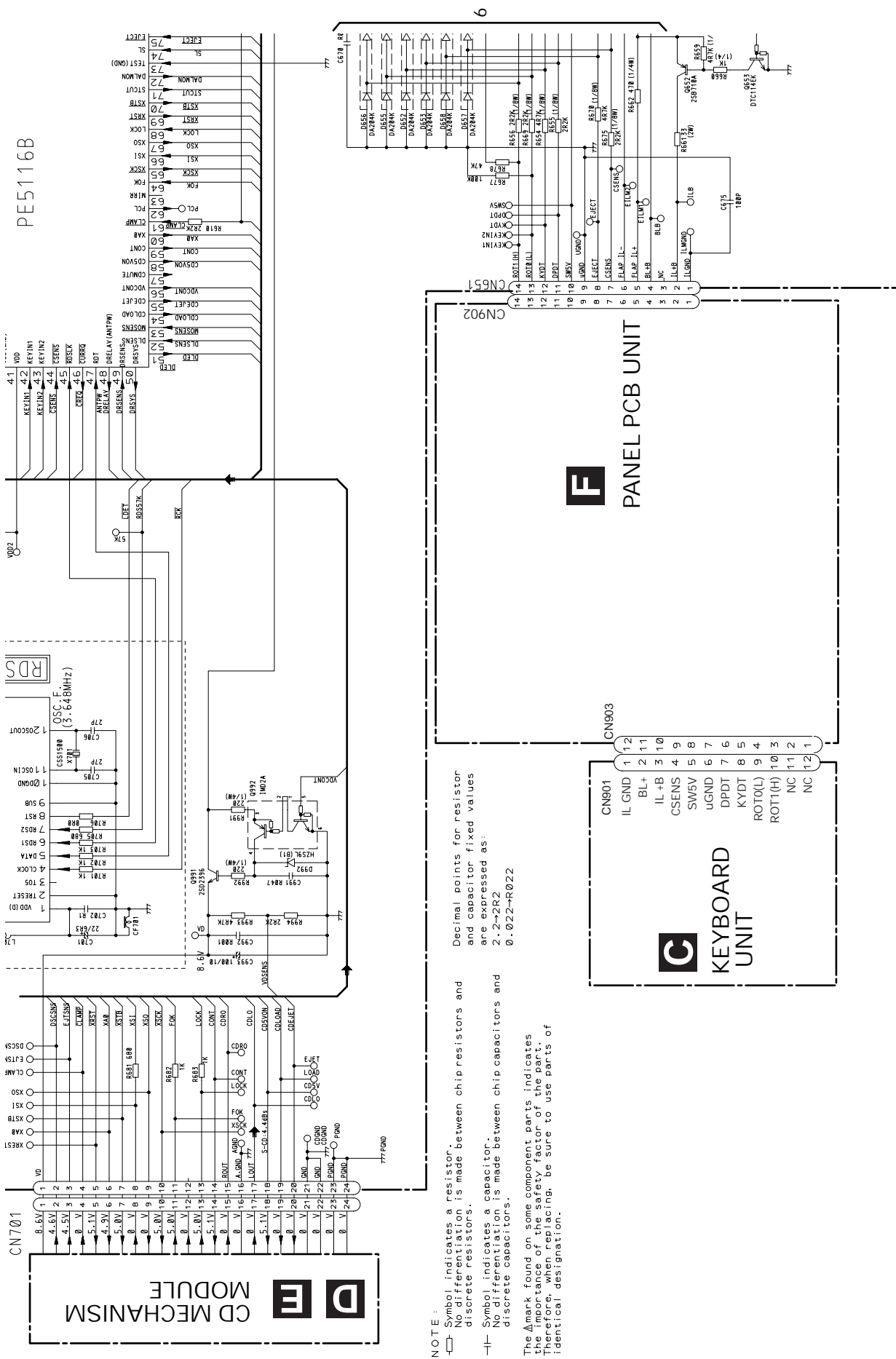
A TUNER AMP UNIT

B FM/AM TUNER UNIT

IC601
SYSTEM
CONTROLLER
PE5116B

RDS PART
PM4009A
IC701





A-a A-b

A

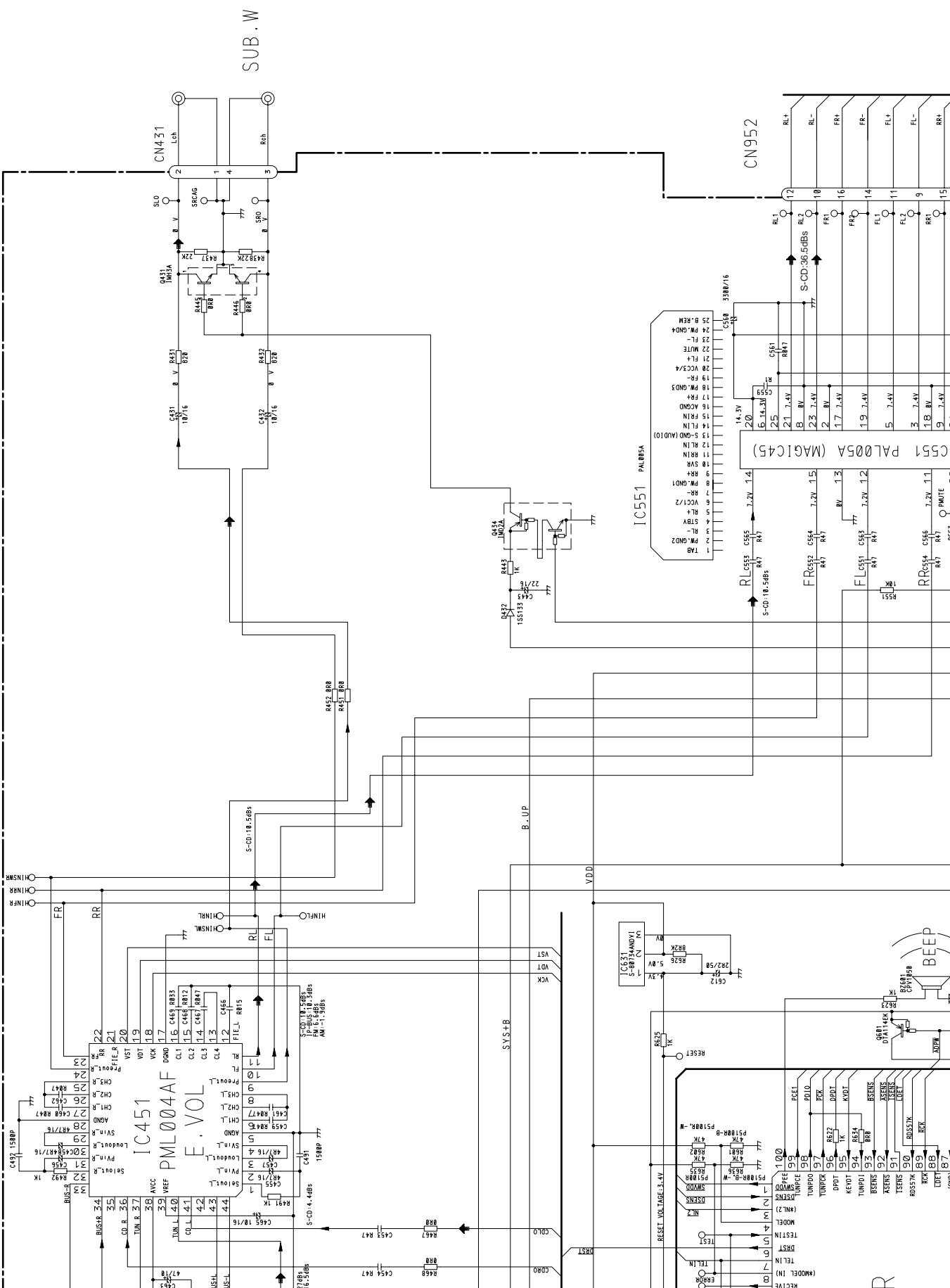
B

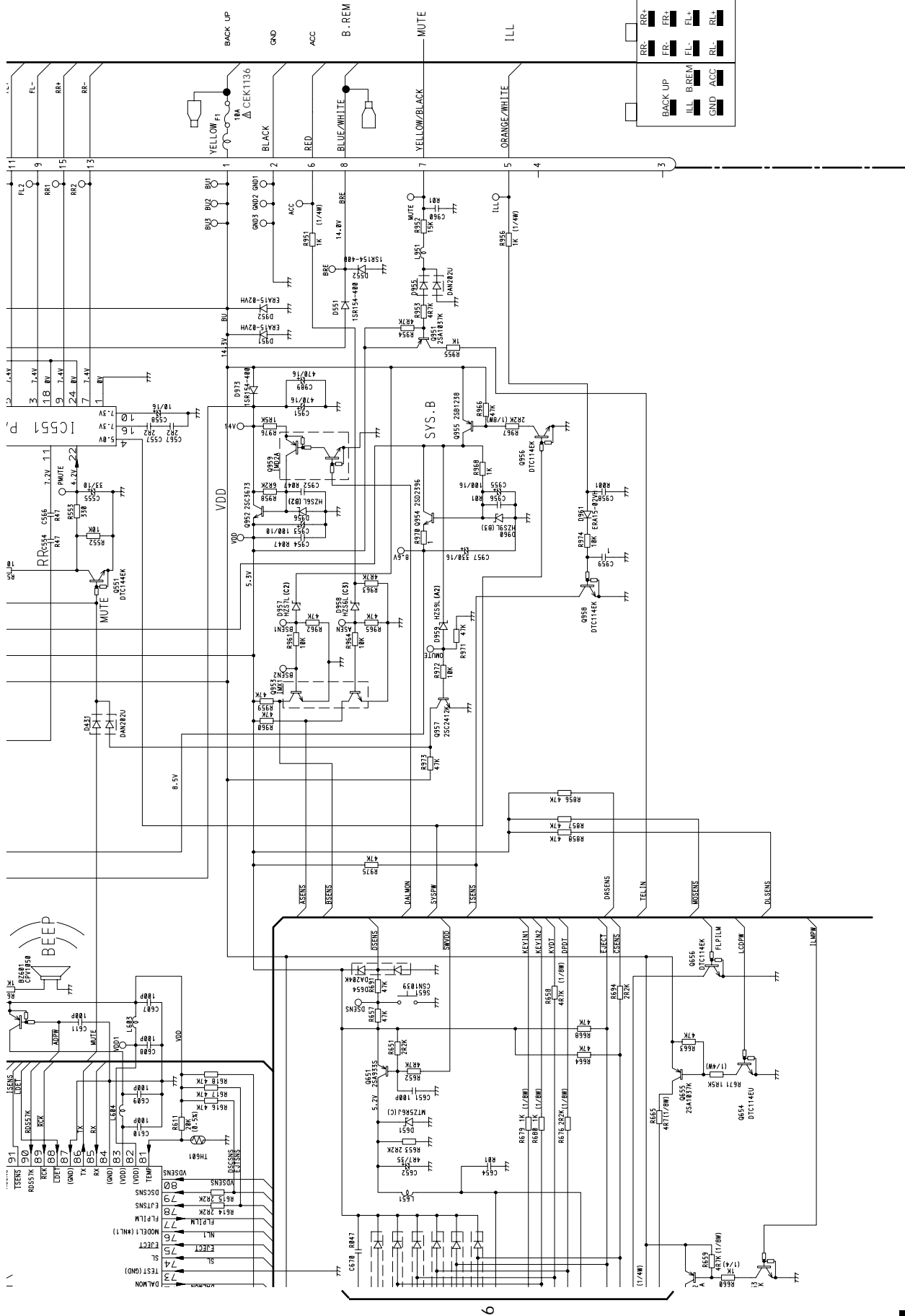
C

D

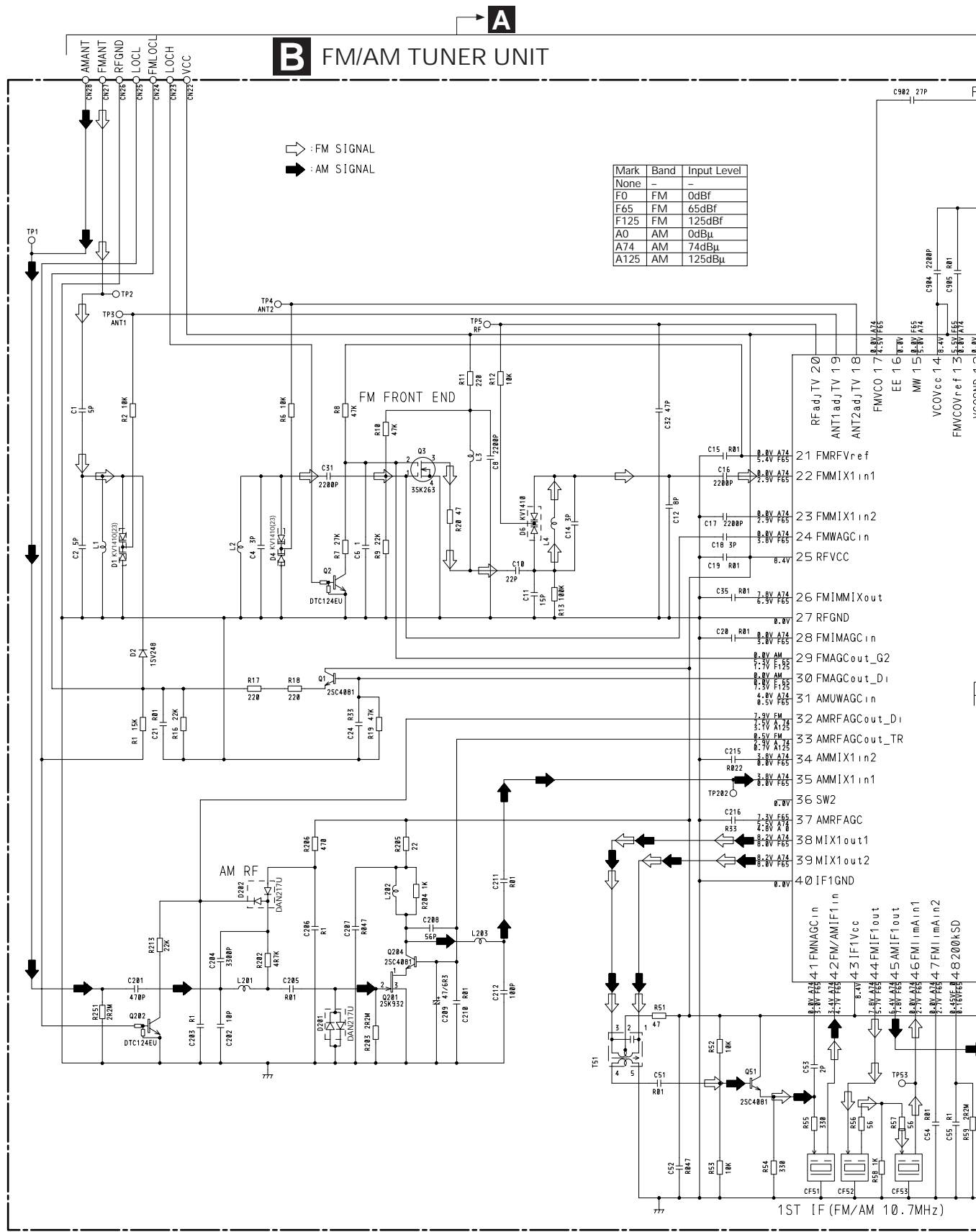
A-a A-b

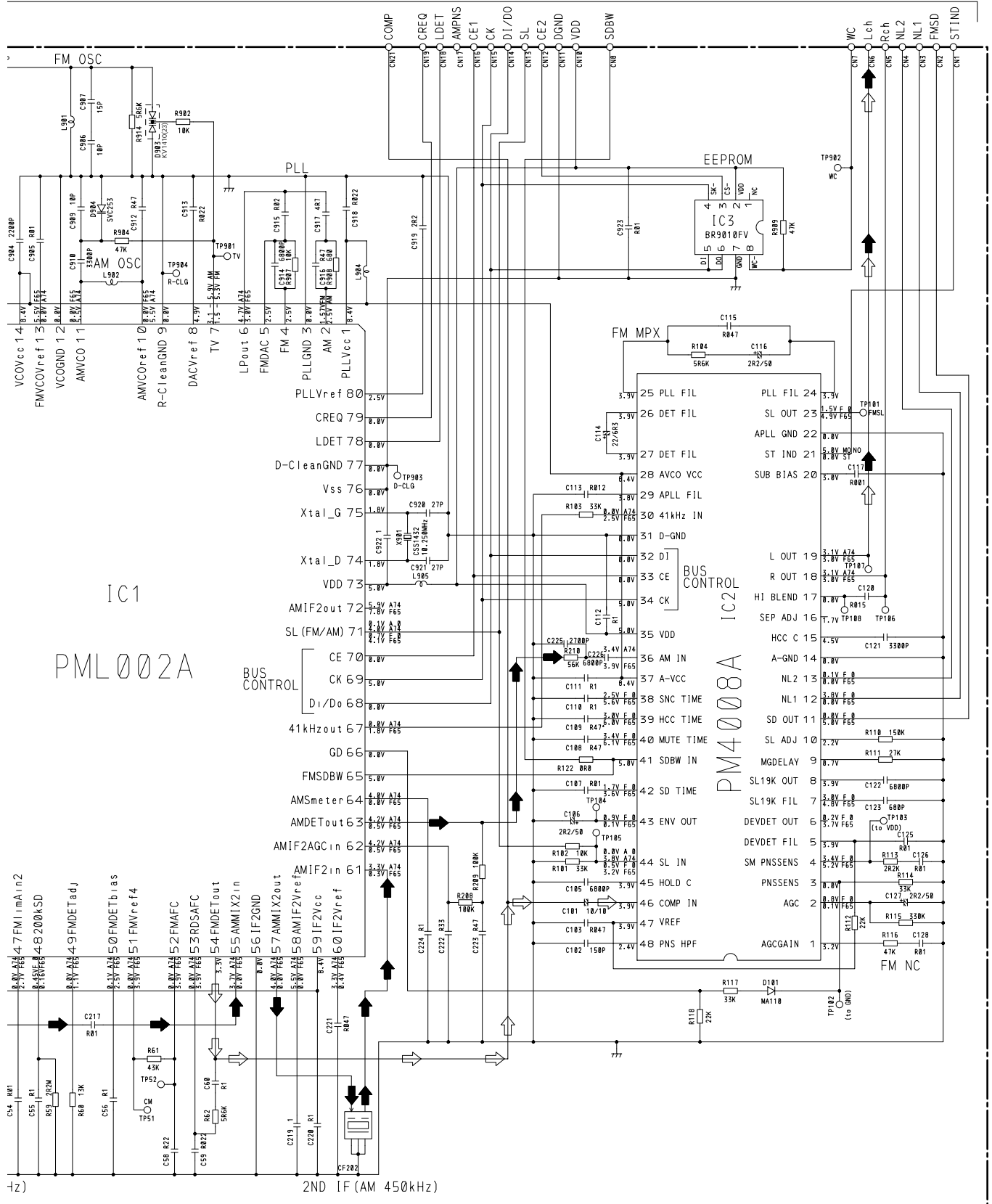
A-b





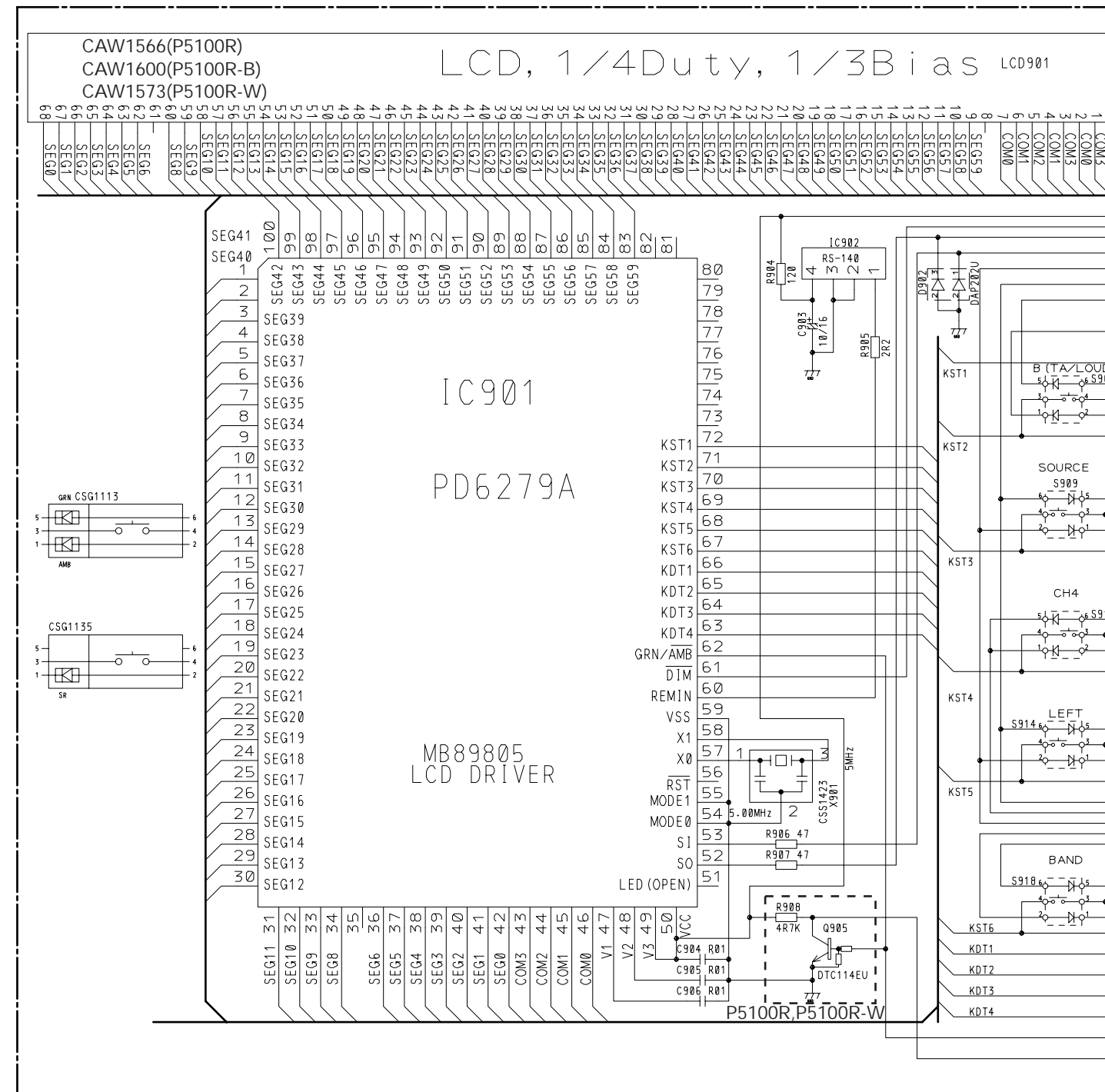
3.3 FM/AM TUNER UNIT

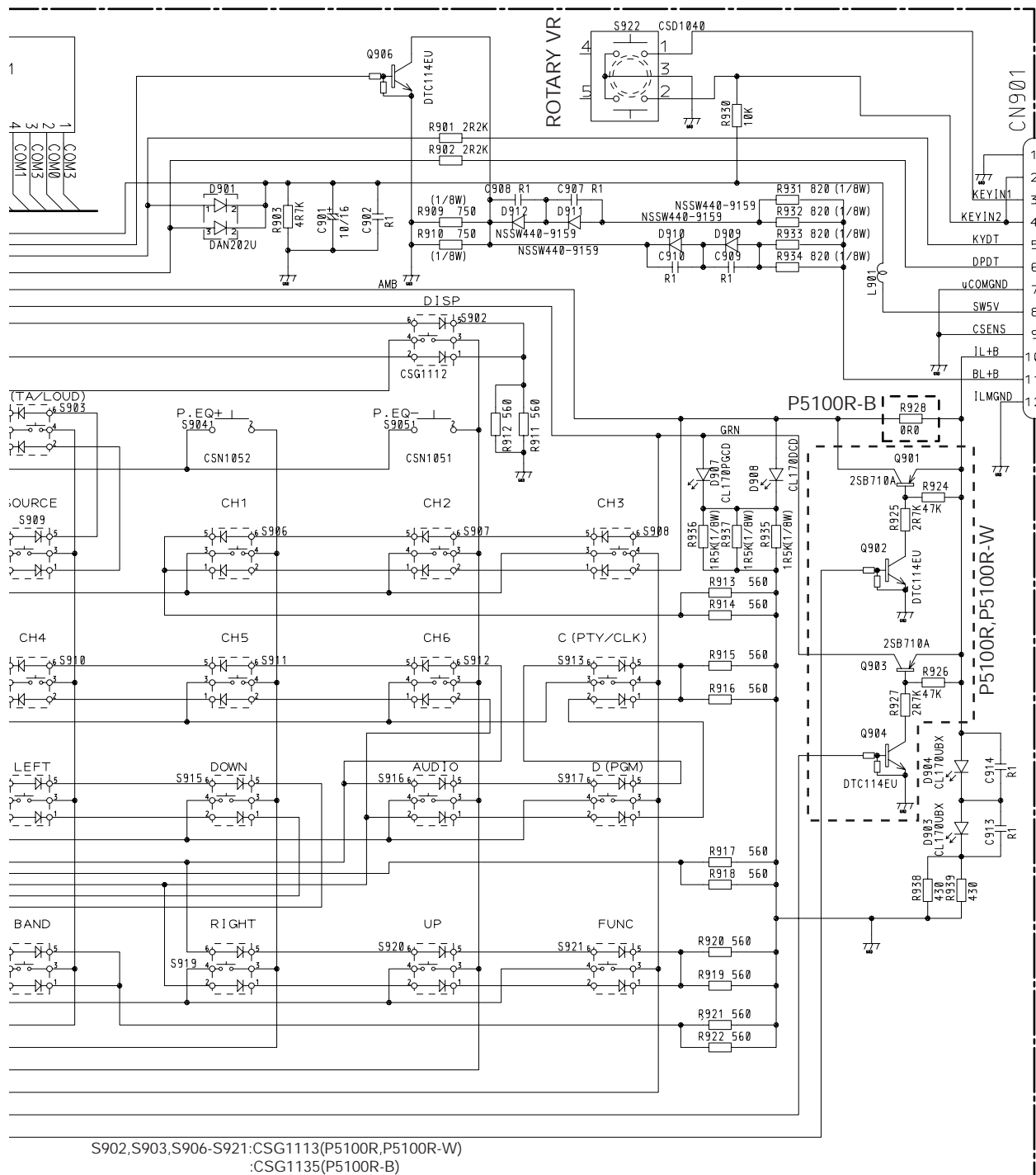




3.4 KEYBOARD UNIT

C KEYBOARD UNIT



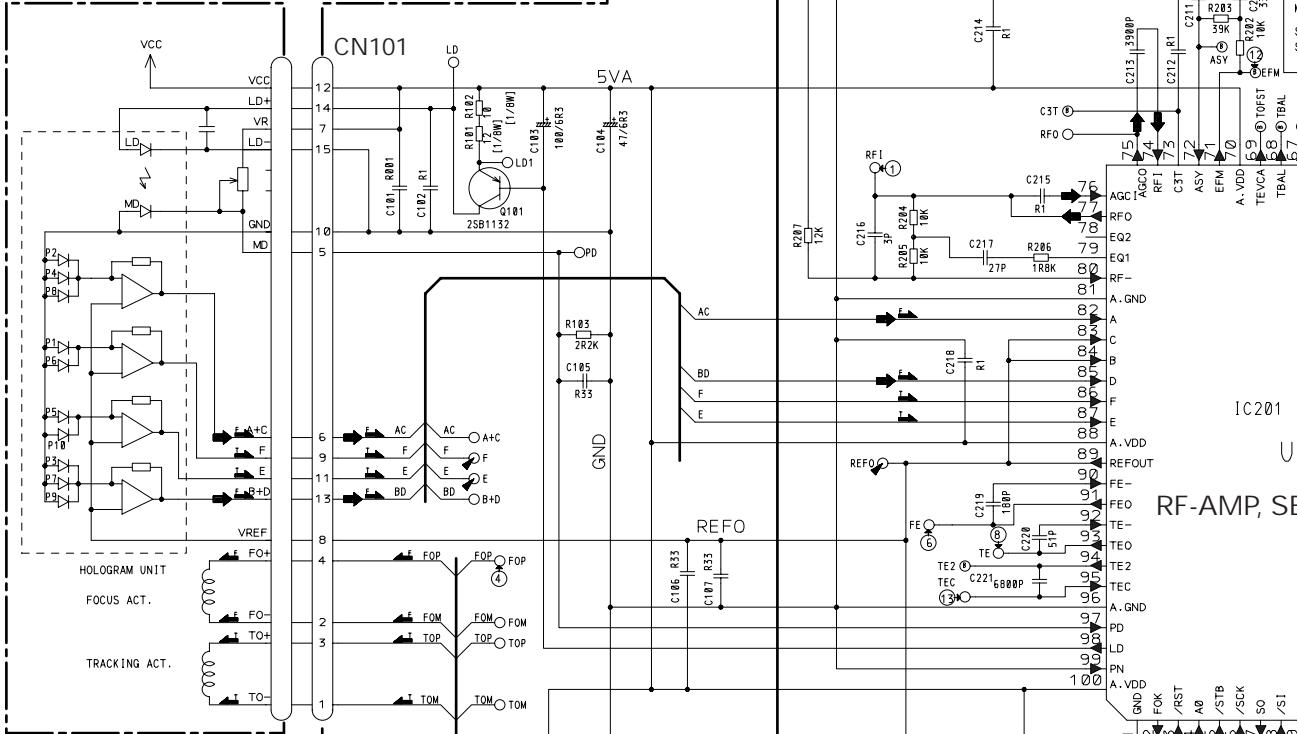


F CN903

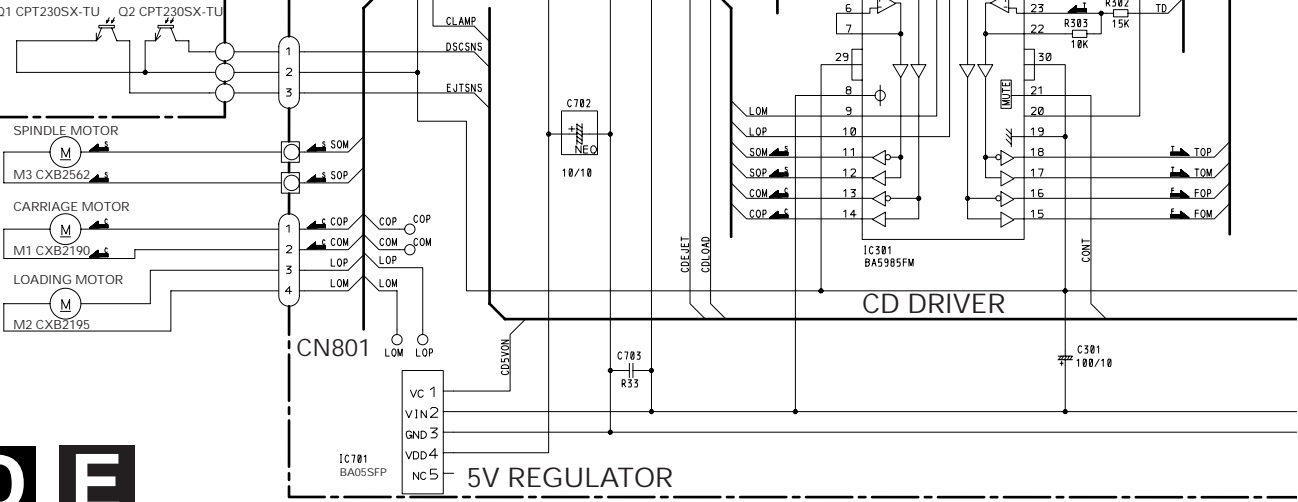
3.5 CD MECHANISM MODULE

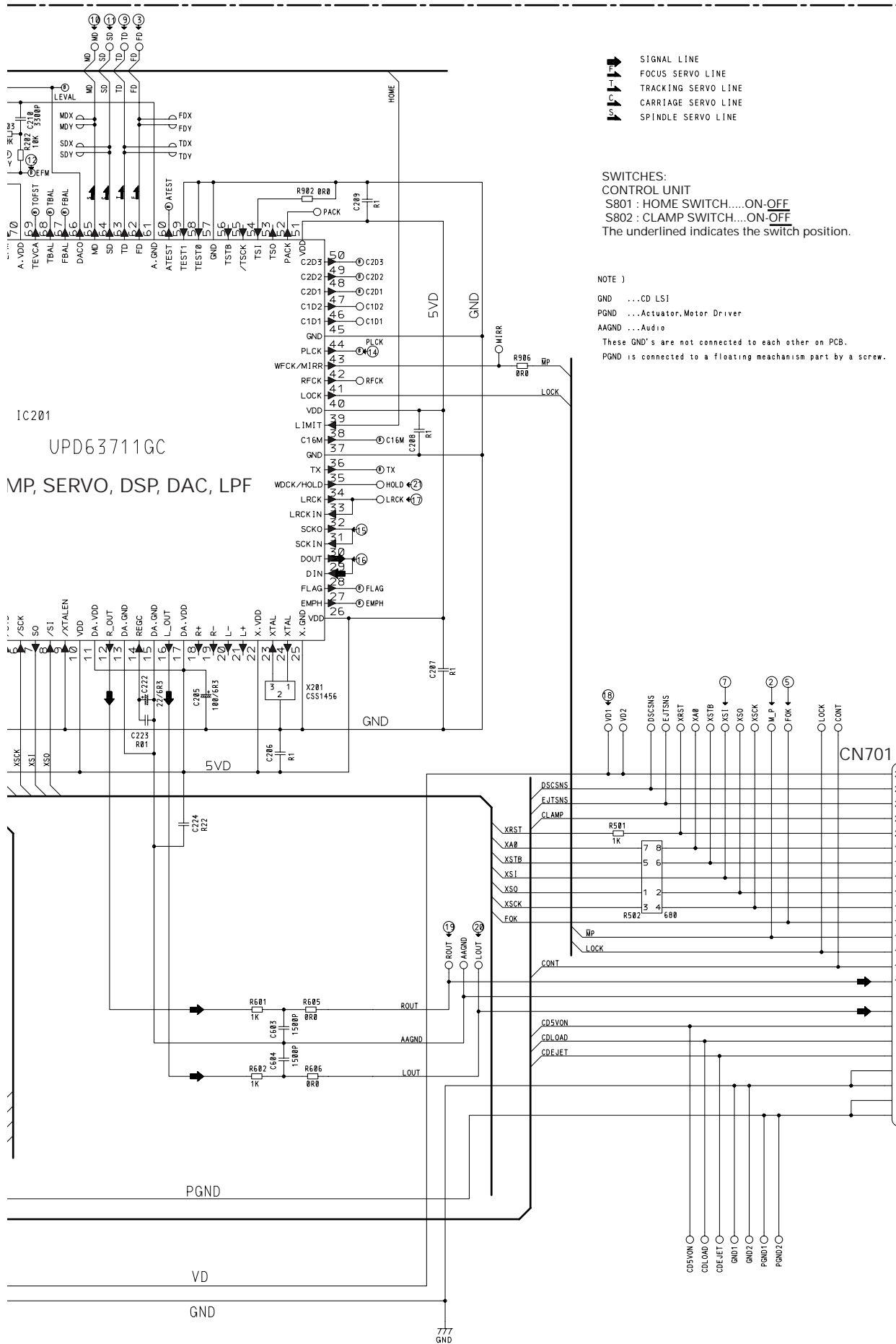
D CONTROL UNIT

PICKUP UNIT
(SERVICE)(P8)



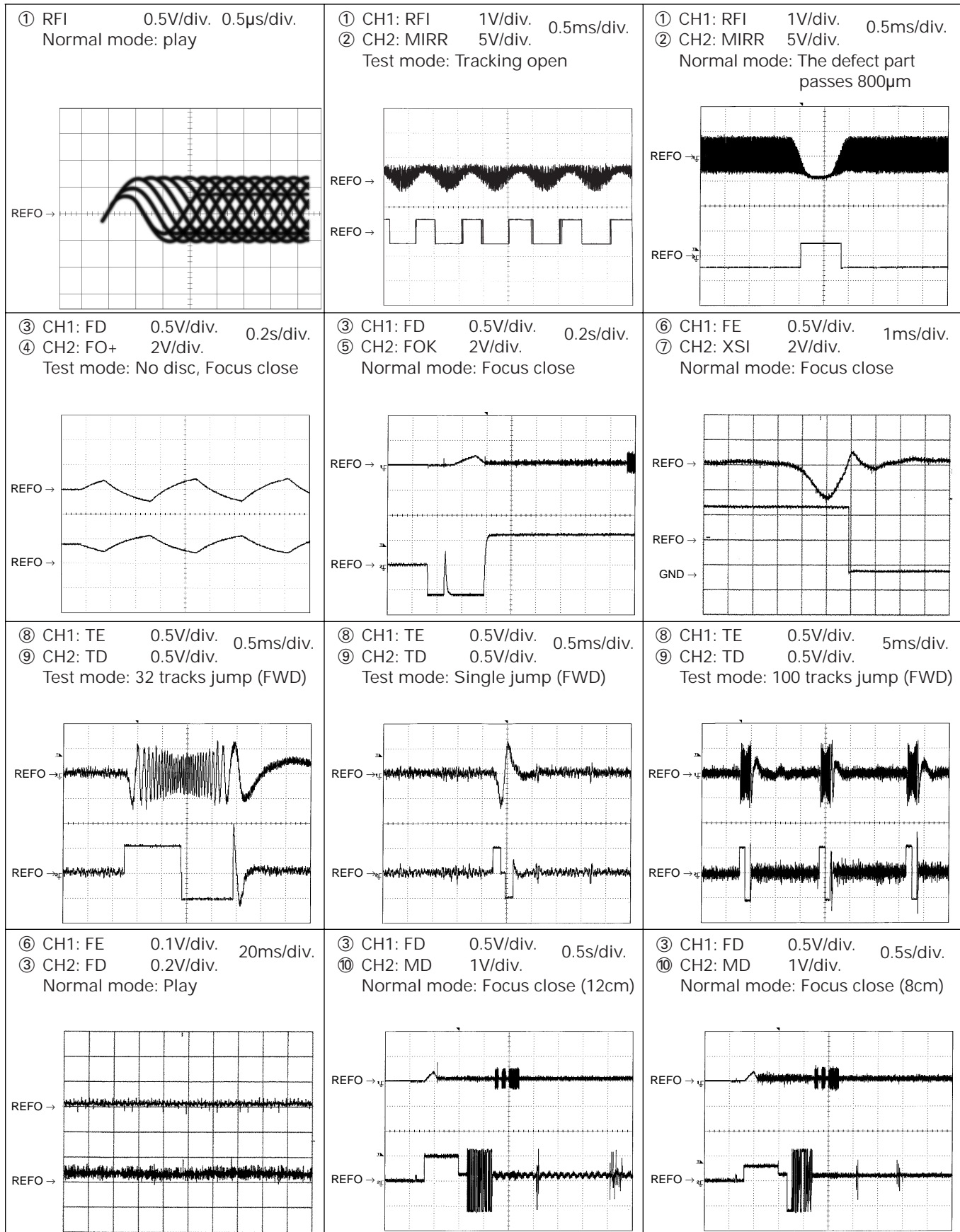
E PHOTO UNIT(S8)

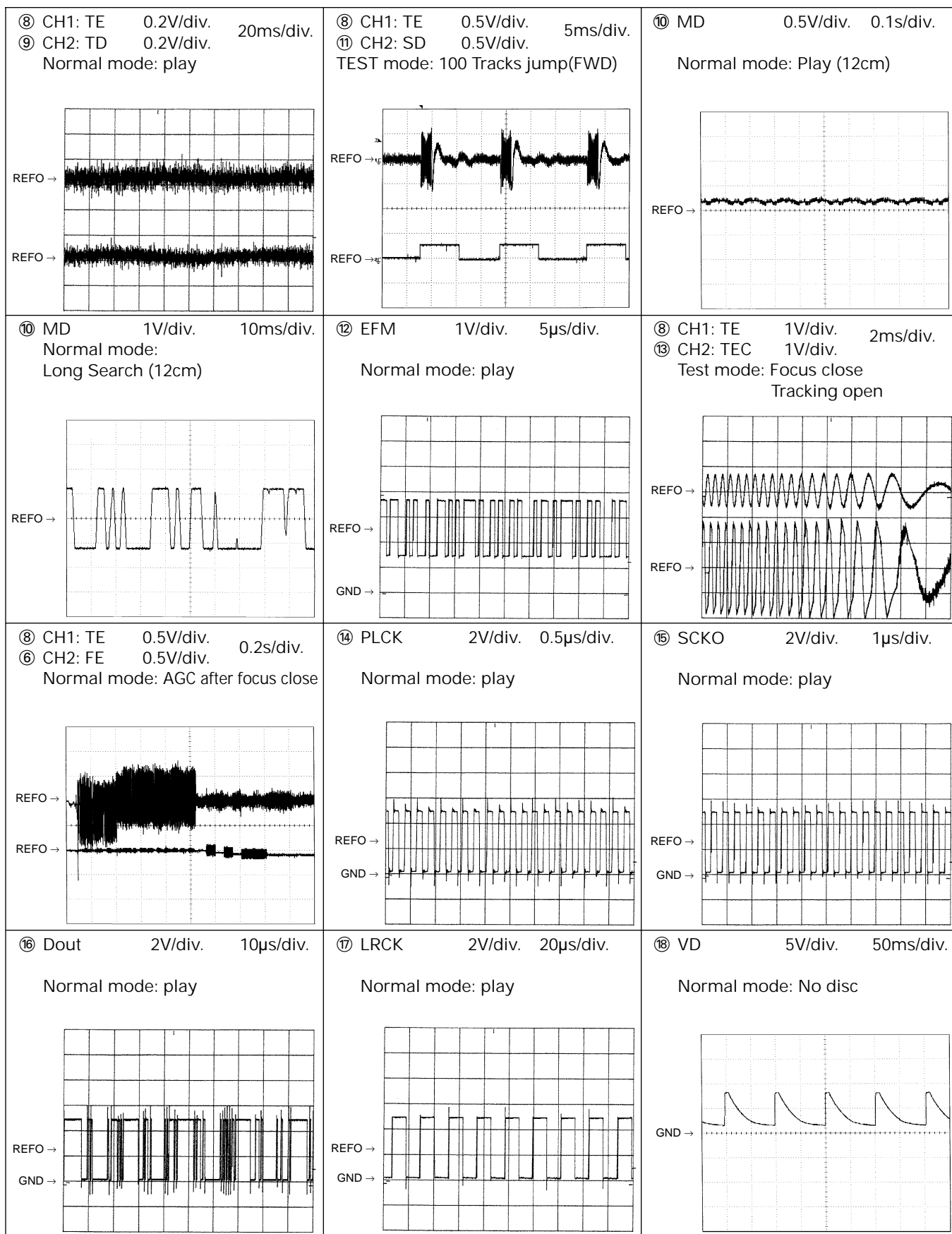




Note:1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
REFO:2.5V

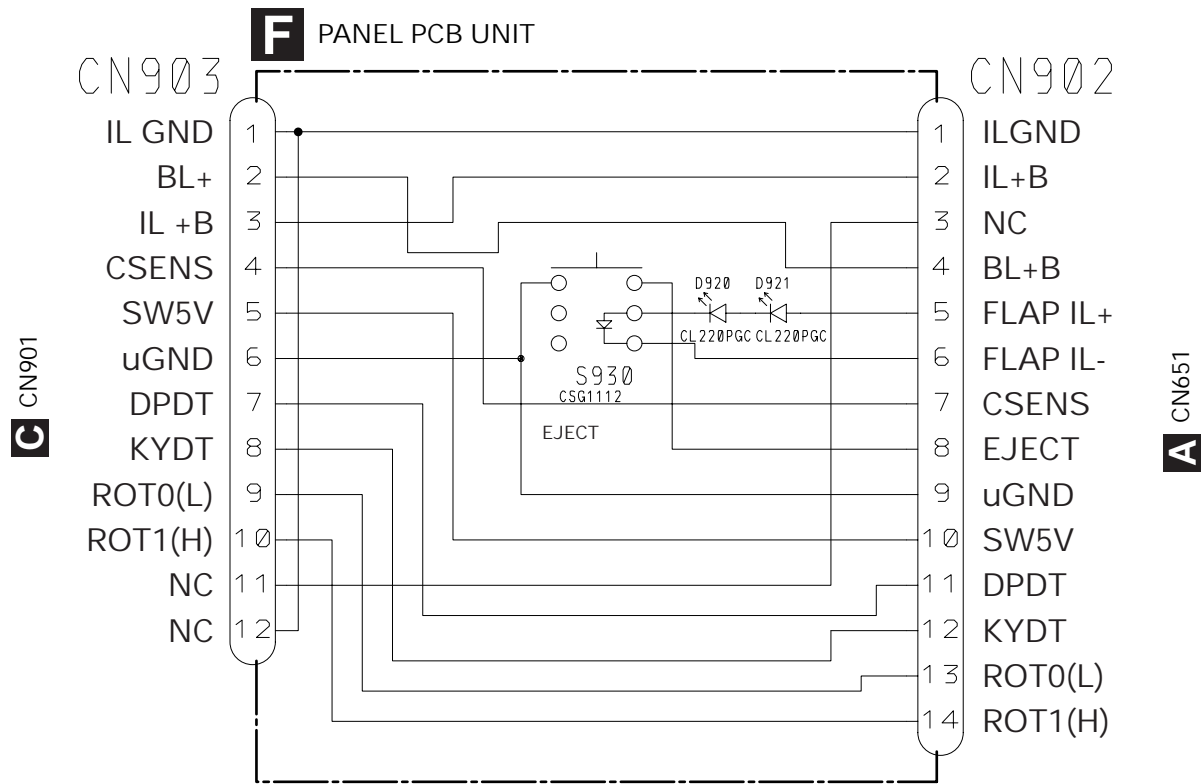
● Waveforms





<div><div><div>⑱ CH1: R OUT 1V/div. 0.2ms/div.</div><div>⑳ CH2: L OUT 1V/div.</div><div>Normal mode: Play (1kHz 0dB)</div></div><div></div></div>	<div><div><div>⑥ CH1: FE 0.2V/div. 1ms/div.</div><div>③ CH2: FD 0.5V/div.</div><div>Normal mode: During AGC</div></div><div></div></div>	<div><div><div>⑧ CH1: TE 0.2V/div. 1ms/div.</div><div>⑨ CH2: TD 0.5V/div.</div><div>Normal mode: During AGC</div></div><div></div></div>
<div><div><div>① CH1: RFI 1V/div. 0.5ms/div.</div><div>② CH2: HOLD 5V/div.</div><div>Normal mode: The defect part passes 800μm(B.D)</div></div><div></div></div>	<div><div><div>③ CH1: FD 0.5V/div. 0.5ms/div.</div><div>② CH2: HOLD 5V/div.</div><div>Normal mode: The defect part passes 800μm(B.D)</div></div><div></div></div>	<div><div><div>⑨ CH1: TD 0.1V/div. 0.5ms/div.</div><div>② CH2: HOLD 5V/div.</div><div>Normal mode: The defect part passes 800μm(B.D)</div></div><div></div></div>

3.6 PANEL PCB UNIT

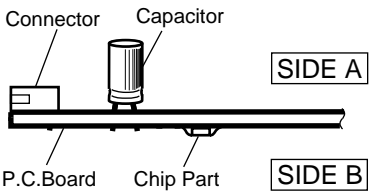


4. PCB CONNECTION DIAGRAM

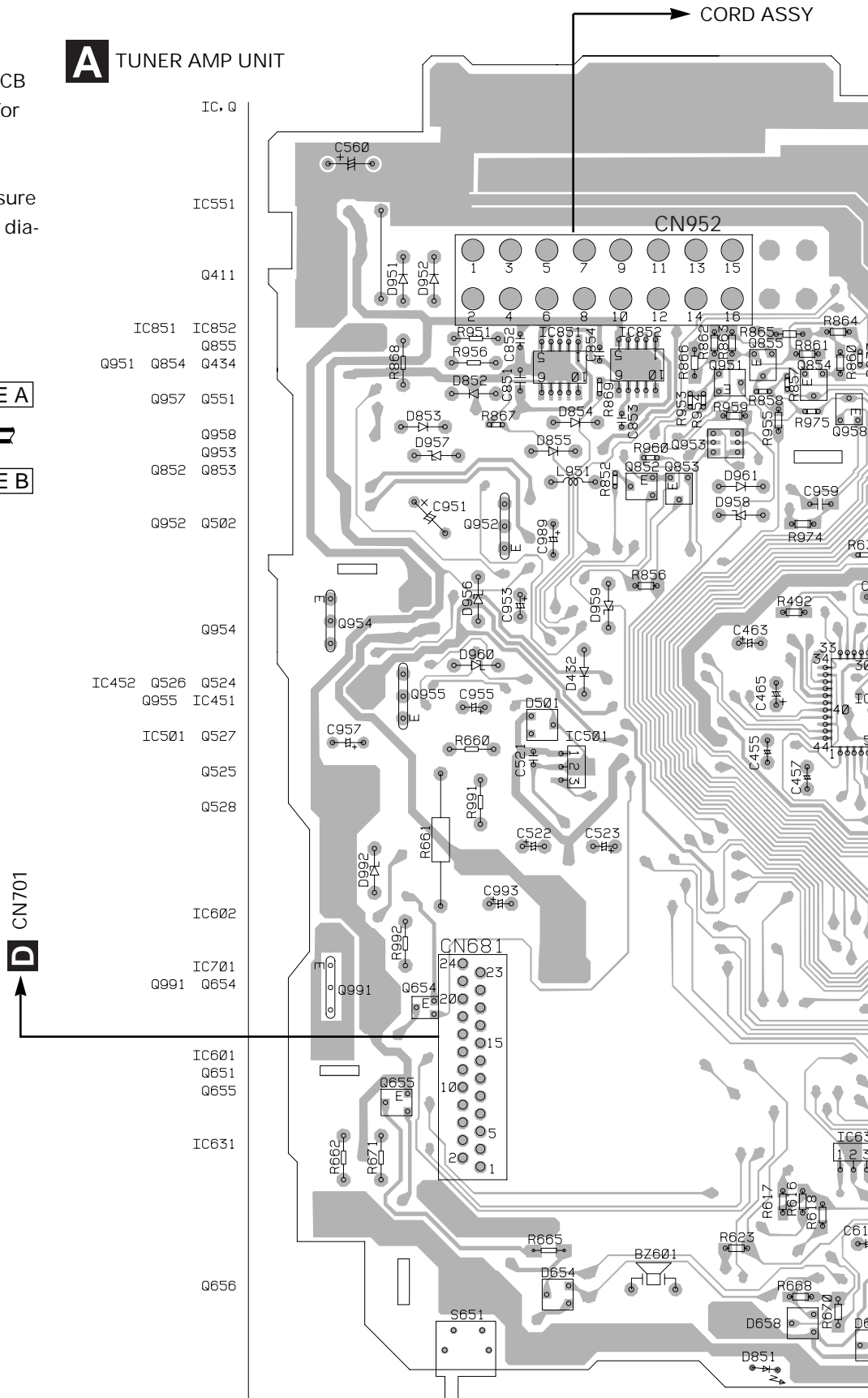
4.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

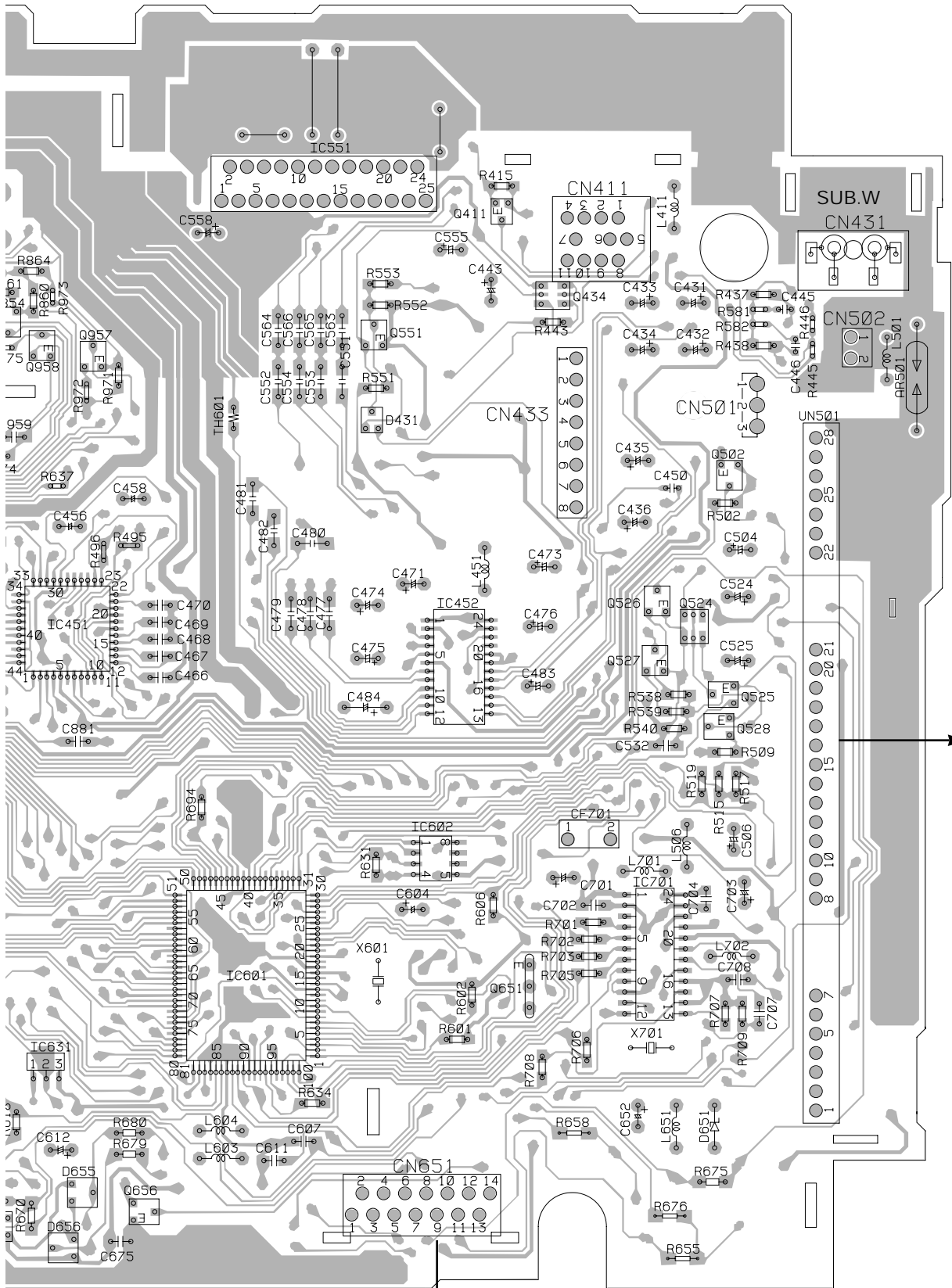
1. The parts mounted on this PCB include all necessary parts for several destination.
For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



A TUNER AMP UNIT



SIDE A



B

F CN902

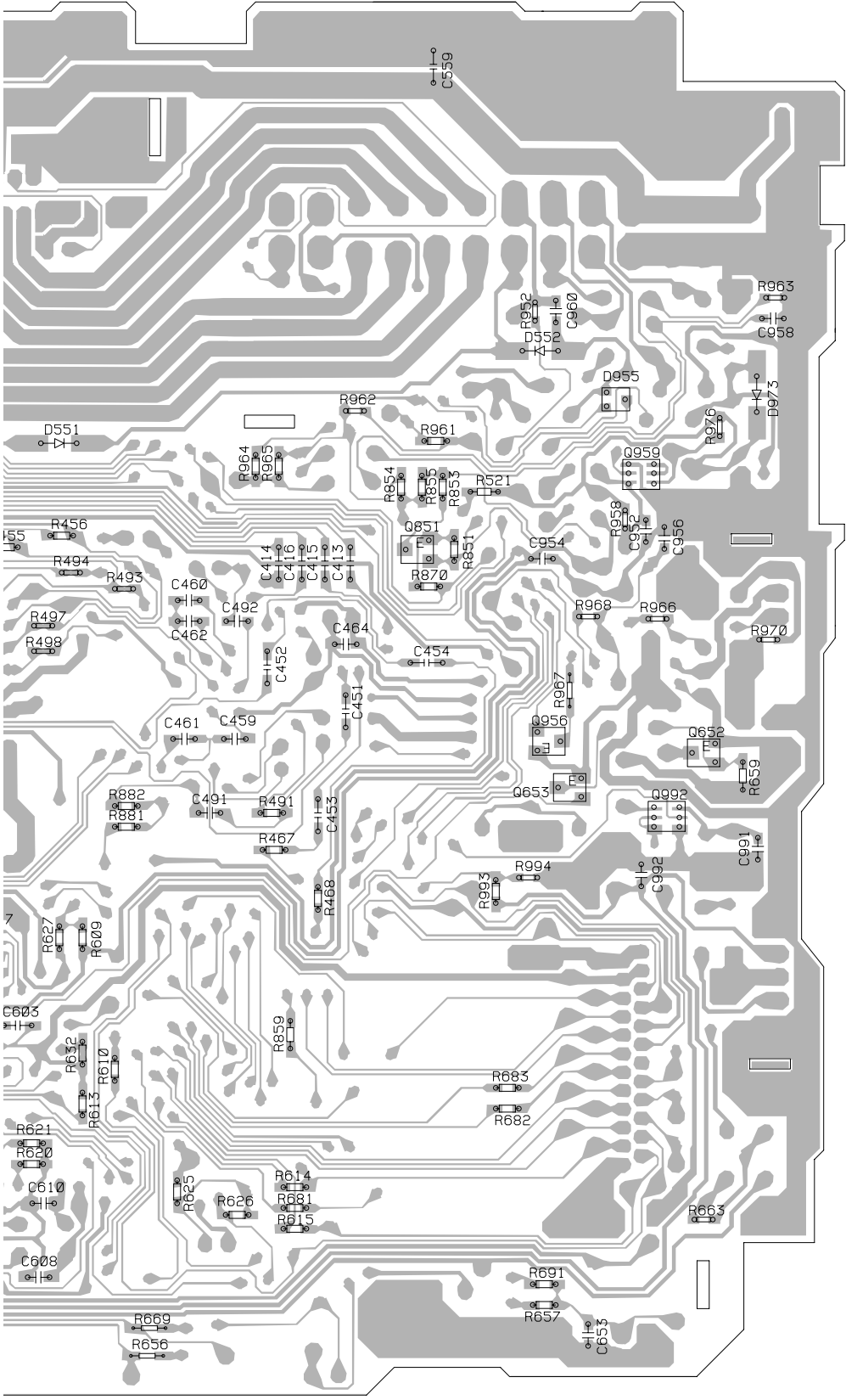
A

A

TUNER AMP UNIT



SIDE B



IC, Q

IC411

Q431

Q412

Q432

Q959

Q851

Q433

Q652 Q956

Q992 Q653

Q501

Q701

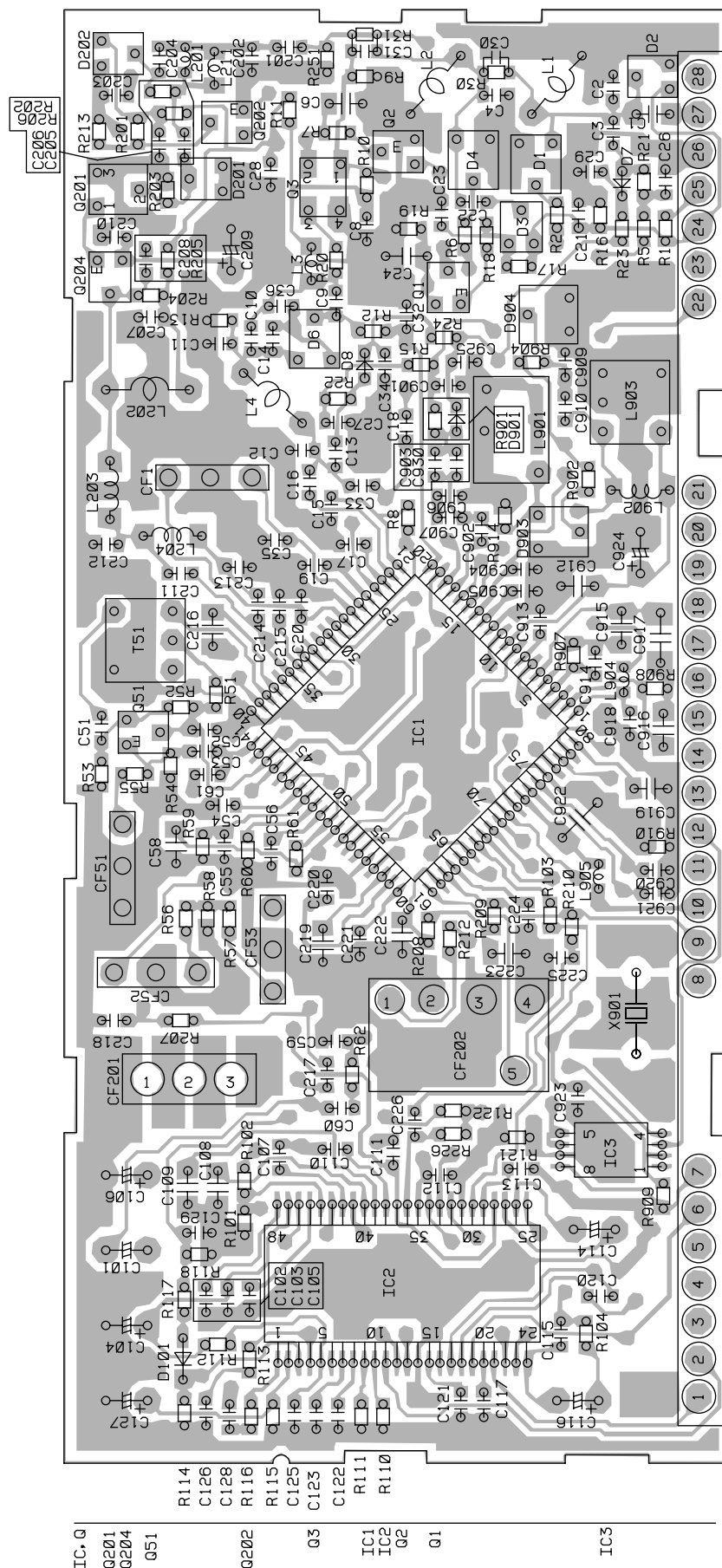
Q541

Q601

4.2 FM/AM TUNER UNIT

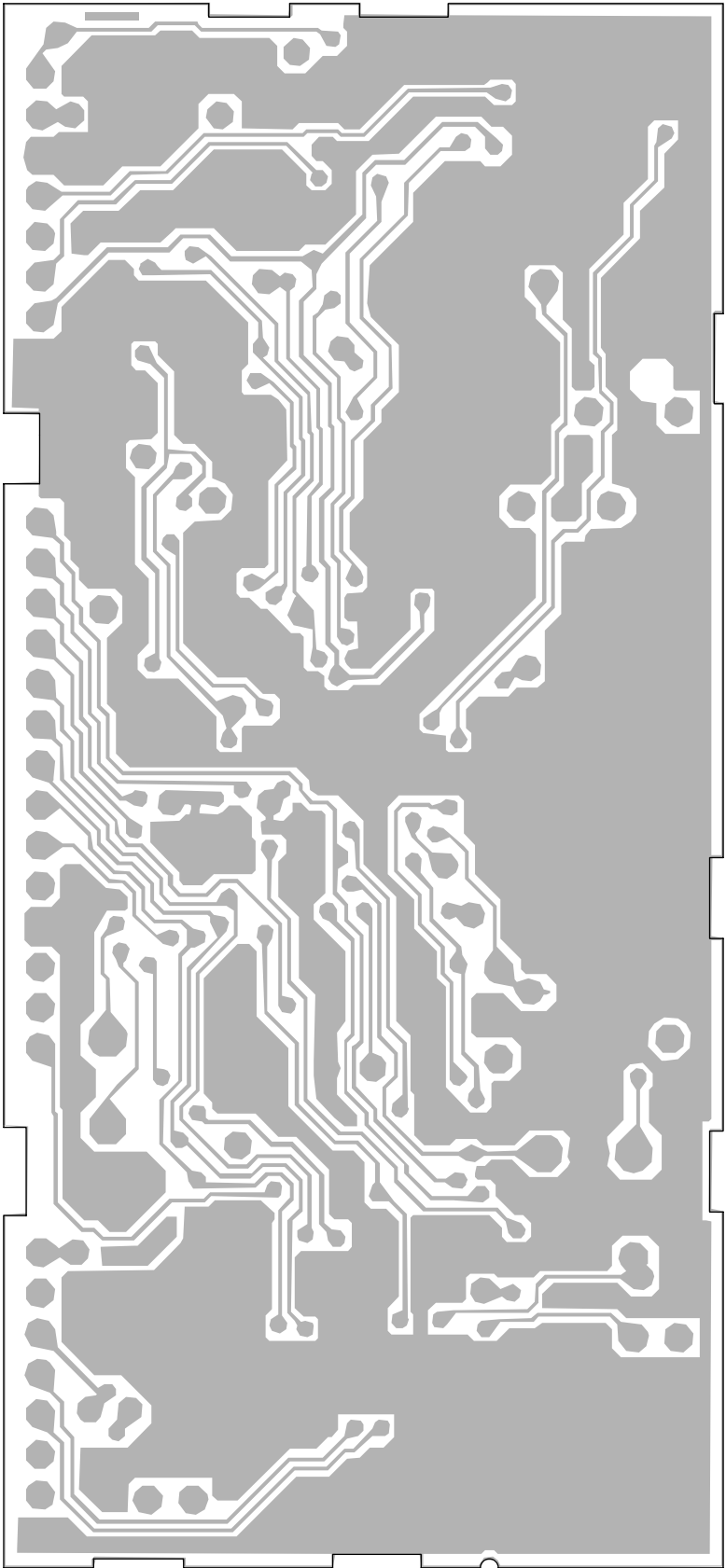
SIDE A

FM/AM TUNER UNIT



IC, Q
Q201
Q204
Q51
Q202
Q3
IC1
IC2
Q2
Q1
IC3

B FM/AM TUNER UNIT



SIDE B

4.3 KEYBOARD UNIT

SIDE A

SIDE B

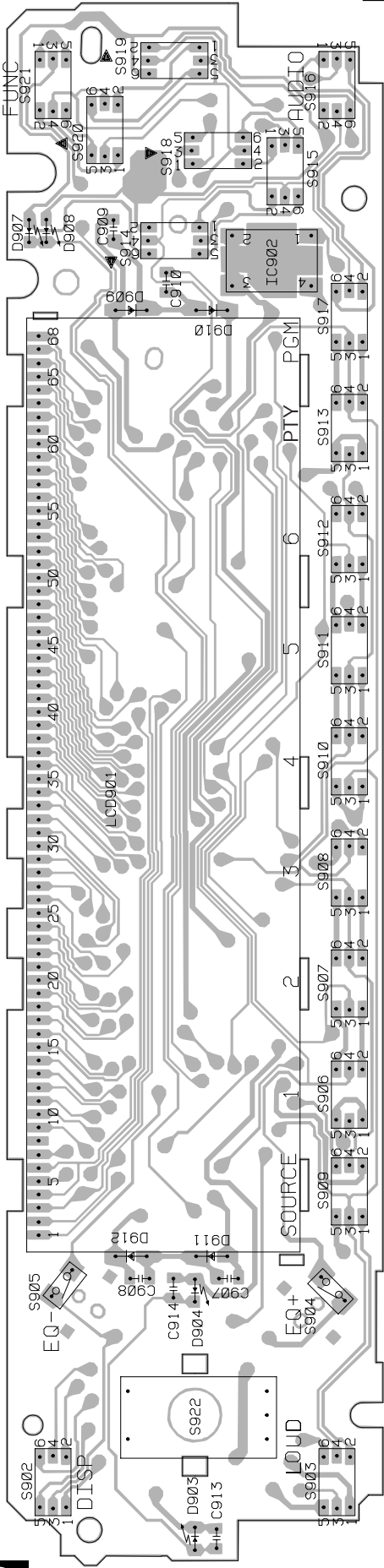
A

B

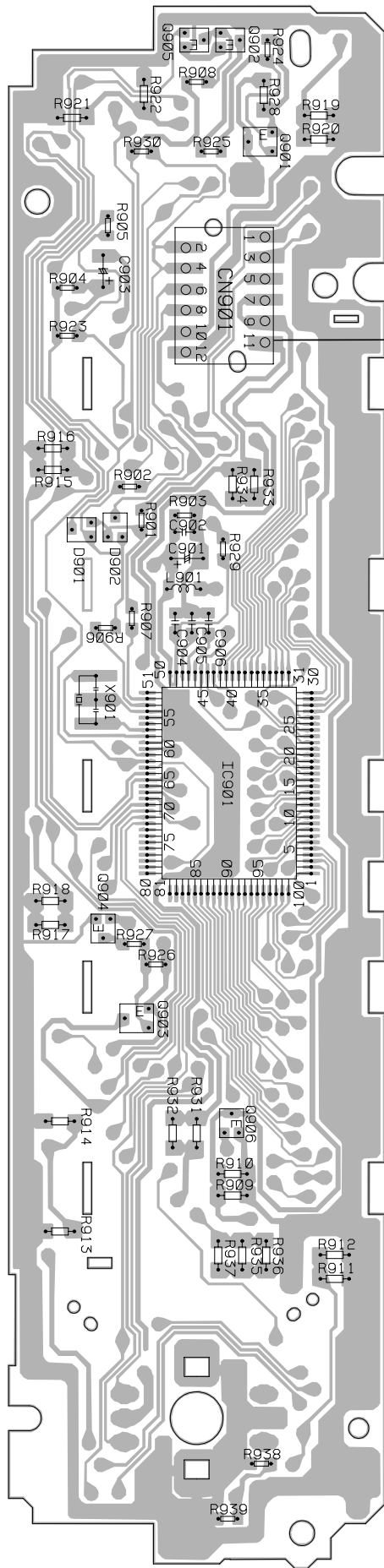
C

D

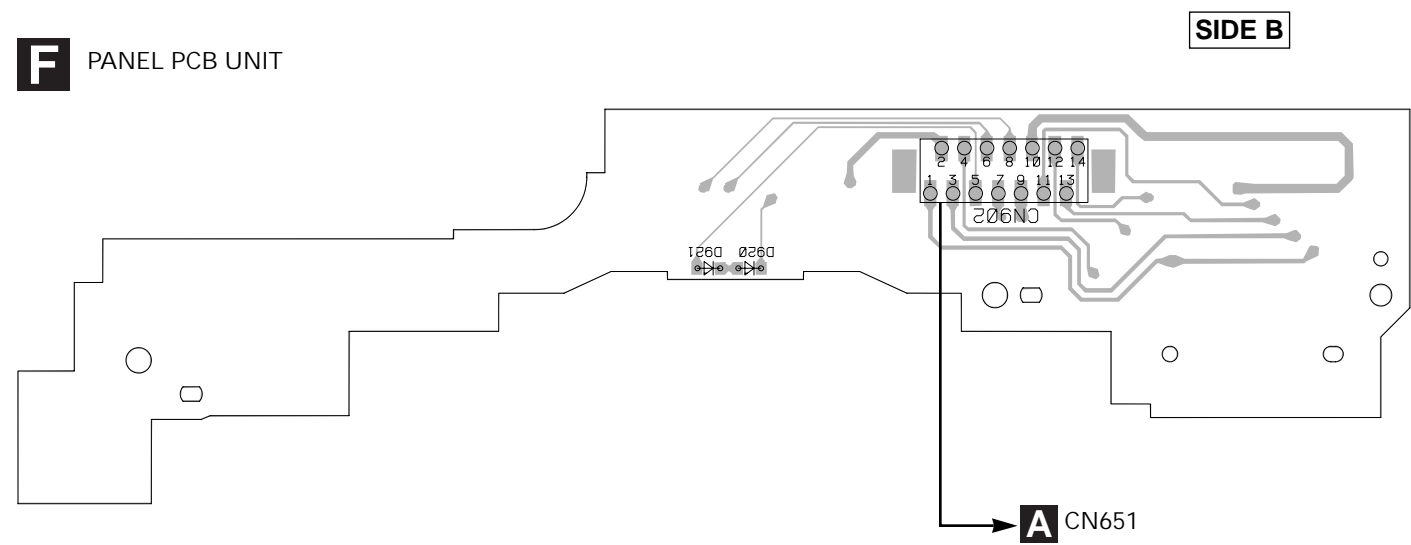
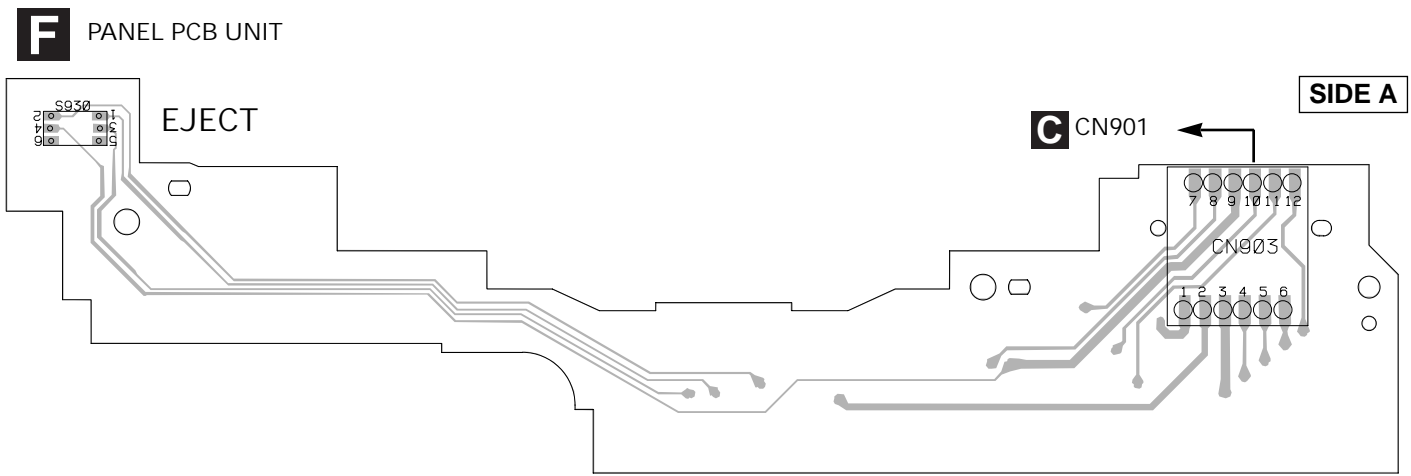
C KEYBOARD UNIT



C KEYBOARD UNIT

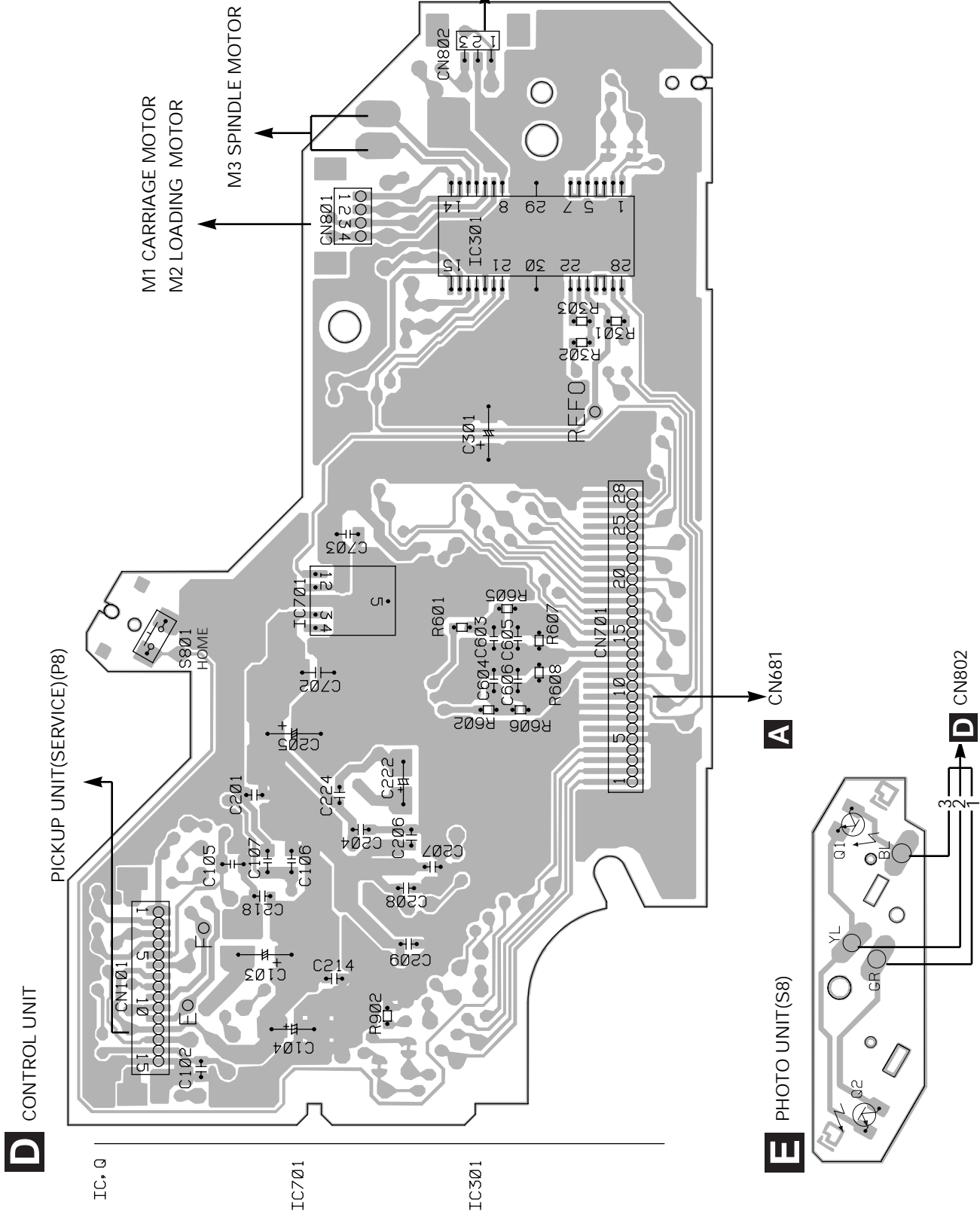


4.4 PANEL PCB UNIT

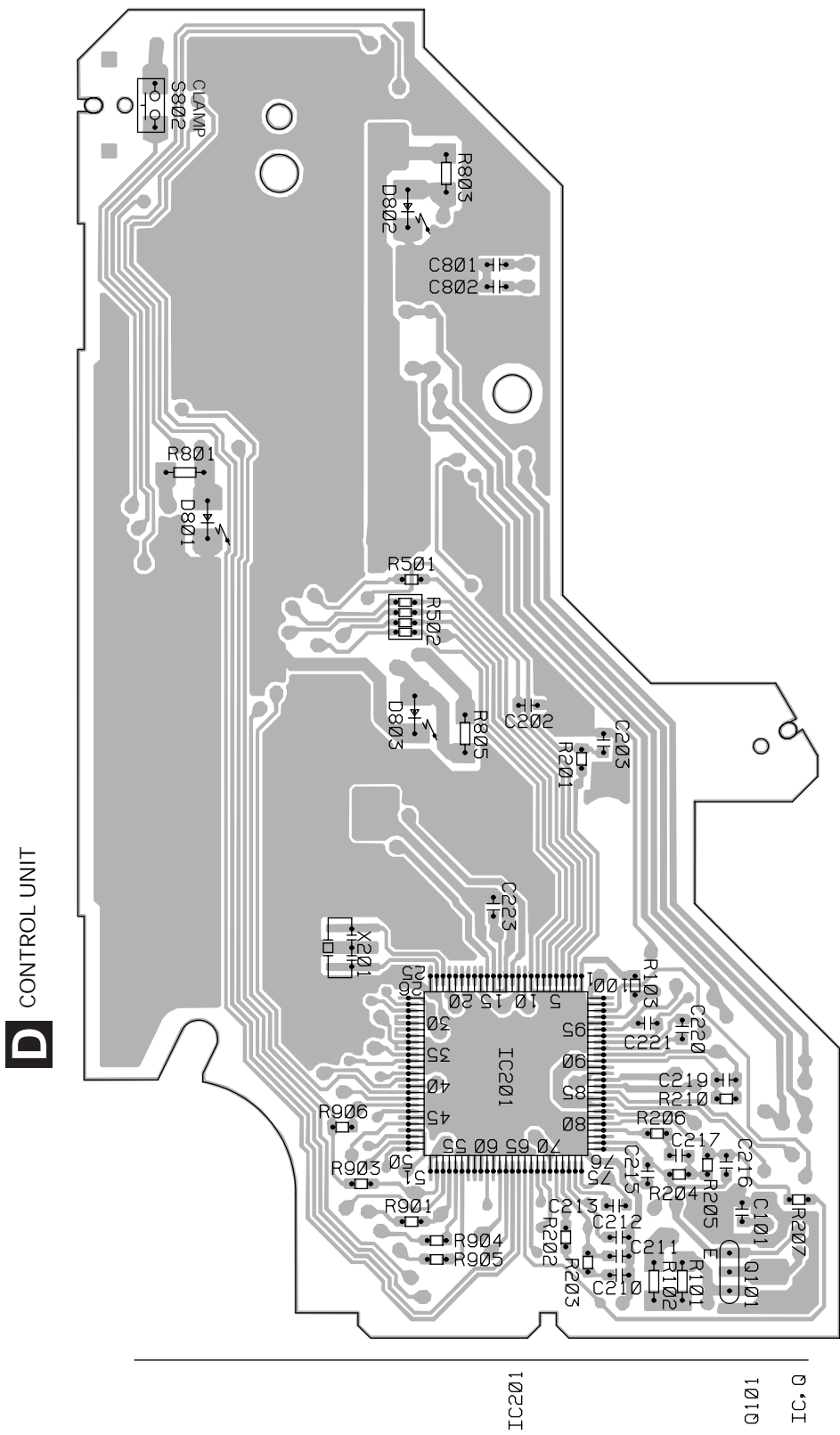


4.5 CD MECHANISM MODULE

SIDE A



SIDE B



D CONTROL UNIT

5. ELECTRICAL PARTS LIST

NOTES:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○○J,RS1/○○S○○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

====Circuit Symbol and No.===Part Name	Part No.	====Circuit Symbol and No.===Part Name	Part No.
A Unit Number : CWM6897(P5100R)		D 652 Diode	DA204K
: CWM6899(P5100R-B)		D 653 Diode	DA204K
: CWM6898(P5100R-W)		D 654 Diode	DA204K
Unit Name : Tuner Amp Unit		D 655 Diode	DA204K
		D 656 Diode	DA204K
MISCELLANEOUS		D 657 Diode	DA204K
IC 411 IC	HA12187FP	D 658 Diode	DA204K
IC 451 IC	PML004AF	D 951 Diode	ERA15-02VH
IC 501 IC	S-81250SGUP	D 952 Diode	ERA15-02VH
IC 551 IC	PAL005A	D 955 Diode	DAN202U
IC 601 IC	PE5116B		
IC 631 IC	S-80734ANDYI	D 956 Diode	HZS6L(B2)
IC 701 IC	PM4009A	D 957 Diode	HZS7L(C2)
Q 411 Transistor	2SA1586	D 958 Diode	HZS6L(C3)
Q 412 Transistor	DTC124EK	D 959 Diode	HZS9L(A2)
Q 431 Transistor	IMH3A	D 960 Diode	HZS9L(B3)
Q 434 Transistor	IMD2A	D 961 Diode	ERA15-02VH
Q 501 Transistor	DTA124EK	D 973 Diode	1SR154-400
Q 502 Transistor	2SC2412K	D 992 Diode	HZS9L(B1)
Q 524 Transistor	IMH3A	L 411 Inductor	LAU3R3J
Q 525 Transistor	DTA114EK	L 501 Ferri-Inductor	LAU4R7K
Q 526 Transistor	2SD1757K	L 502 Inductor	CTF1399
Q 527 Transistor	2SD1757K	L 506 Ferri-Inductor	LAU2R2K
Q 528 Transistor	2SC2412K	L 601 Inductor	CTF1399
Q 541 Transistor	2SC2412K	L 603 Ferri-Inductor	LAU2R2K
Q 551 Transistor	DTC144EK	L 604 Ferri-Inductor	LAU2R2K
Q 601 Transistor	DTA114EK	L 651 Ferri-Inductor	LAU101K
Q 651 Transistor	2SA933S	L 701 Ferri-Inductor	LAU101K
Q 652 Transistor	2SB710A	L 702 Ferri-Inductor	LAU101K
Q 653 Transistor	DTC114EK	L 703 Inductor	CTF1399
Q 654 Transistor	DTC114EU	L 951 Ferri-Inductor	LAU2R2K
Q 655 Transistor	2SA1037K	TH 601 Thermistor	CCX1037
Q 656 Transistor	DTC114EK	CF 701 Filter	CTF1071
Q 701 Transistor	DTA124EK	X 601 Radiator 12.582912MHz	CSS1495
Q 951 Transistor	2SA1037K	X 701 Radiator 3.648MHz	CSS1500
Q 952 Transistor	2SC3673	S 651 Switch	CSN1039
Q 953 Transistor	IMX1	BZ 601 Buzzer	CPV1050
Q 954 Transistor	2SD2396	AR 501 Arrester	DSP-201M
Q 955 Transistor	2SB1238	FM/AM Tuner Unit	CWE1500
Q 956 Transistor	DTC114EK		
Q 957 Transistor	2SC2412K		
Q 958 Transistor	DTC114EK		
Q 959 Transistor	IMD2A		
Q 991 Transistor	2SD2396		
Q 992 Transistor	IMD2A		
D 431 Diode	DAN202U		
D 432 Diode	1SS133		
D 501 Diode	MA3160(LMH)		
D 551 Diode	1SR154-400		
D 552 Diode	1SR154-400		
D 651 Diode	MTZ5R6J(C)		
		RESISTORS	
		R 411	RS1/10S620J
		R 412	RS1/10S101J
		R 413	RS1/10S101J
		R 414	RS1/10S222J
		R 415	RS1/10S332J
		R 416	RS1/10S682J
		R 417	RS1/10S102J
		R 418	RS1/10S102J
		R 419	RS1/10S473J
		R 420	RS1/10S103J
		R 421	RS1/10S473J
		R 423	RS1/10S821J
		R 424	RS1/10S821J
		R 425	RS1/10S223J
		R 426	RS1/10S223J

====Circuit Symbol and No.===Part Name	Part No.	====Circuit Symbol and No.===Part Name	Part No.
R 427	RS1/10S102J	R 606	RS1/10S473J
R 428	RS1/10S102J	R 607	RA3C102J
R 431	RS1/10S821J	R 610	RS1/10S222J
R 432	RS1/10S821J	R 611	RN1/10SE2002D
R 437	RS1/10S223J	R 614	RS1/10S222J
R 438	RS1/10S223J	R 615	RS1/10S222J
R 443	RS1/10S102J	R 616	RS1/10S473J
R 445	RS1/16S0R0J	R 617	RS1/10S473J
R 446	RS1/16S0R0J	R 618	RS1/10S473J
R 451	RS1/10S0R0J	R 622	RS1/10S102J
R 452	RS1/10S0R0J	R 623	RS1/10S102J
R 467	RS1/10S0R0J	R 625	RS1/10S102J
R 468	RS1/10S0R0J	R 626	RS1/10S822J
R 491	RS1/10S102J	R 633	RS1/8S473J
R 492	RS1/10S102J	R 634	RS1/10S0R0J
R 501	RS1/10S0R0J	R 635	(P5100R)
R 502	RS1/10S222J	R 636	(P5100R-B,P5100R-W)
R 503	RS1/10S222J	R 637	
R 506	RS1/10S0R0J	R 651	RS1/8S473J
R 507	RS1/10S0R0J	R 652	RS1/10S473J
R 508	RS1/10S681J	R 653	RS1/16S101J
R 509	RS1/10S473J	R 654	RS1/10S222J
R 510	RS1/10S681J	R 655	RS1/8S472J
R 511	RS1/10S473J	R 656	RS1/8S222J
R 512	RS1/10S681J	R 657	RS1/8S222J
R 513	RS1/10S473J	R 658	RS1/10S473J
R 514	RS1/10S681J	R 659	RS1/8S472J
R 515	RS1/10S473J	R 660	RD1/4PU102J
R 516	RS1/10S681J	R 661	RS2PMF330J
R 517	RS1/10S472J	R 662	RD1/4PU471J
R 518	RS1/10S103J	R 663	RS1/10S473J
R 519	RS1/10S473J	R 664	RS1/10S473J
R 520	RS1/10S681J	R 665	RS1/8S477J
R 521	RS1/8S151J	R 668	RS1/10S473J
R 522	RS1/10S681J	R 669	RS1/8S222J
R 523	RS1/10S473J	R 670	RS1/8S472J
R 530	RS1/10S681J	R 671	RD1/4PU152J
R 531	RS1/10S473J	R 675	RS1/8S222J
R 532	RS1/10S681J	R 676	RS1/8S222J
R 533	RS1/10S473J	R 677	RS1/10S104J
R 534	RS1/10S222J	R 678	RS1/10S473J
R 535	RS1/10S222J	R 679	RS1/8S102J
R 536	RS1/10S223J	R 680	RS1/8S102J
R 537	RS1/10S223J	R 681	RS1/10S681J
R 538	RS1/10S224J	R 682	RS1/10S102J
R 539	RS1/10S224J	R 683	RS1/10S102J
R 540	RS1/10S224J	R 691	RS1/10S473J
R 541	RS1/10S162J	R 694	RS1/10S222J
R 542	RS1/10S162J	R 701	RS1/10S102J
R 543	RS1/10S102J	R 702	RS1/10S102J
R 544	RS1/10S393J	R 703	RS1/10S102J
R 545	RS1/10S272J	R 705	RS1/10S681J
R 546	RS1/10S272J	R 706	RS1/10S0R0J
R 547	RS1/10S0R0J	R 707	RS1/10S0R0J
R 548	RS1/10S153J	R 708	RS1/10S102J
R 549	RS1/10S474J	R 709	RS1/10S0R0J
R 550	RS1/10S473J	R 710	RS1/10S225J
R 551	RS1/10S103J	R 856	RS1/10S473J
R 552	RS1/10S103J	R 857	RS1/16S473J
R 553	RS1/10S331J	R 858	RS1/16S473J
R 601	(P5100R-B)	R 951	RD1/4PU102J
R 602	(P5100R,P5100R-W)	R 952	RS1/10S153J
R 603		R 953	RS1/16S472J
R 604		R 954	RS1/16S472J
R 605	RS1/10S473J	R 955	RS1/10S102J

DEH-P5100R,P5100R-W,P5100R-B

====Circuit Symbol and No.==Part Name	Part No.	====Circuit Symbol and No.==Part Name	Part No.
R 956	RD1/4PU102J	C 523	CEJA101M16
R 958	RS1/10S622J	C 524	CEAL1R0M50
R 959	RS1/10S473J	C 525	CEAL1R0M50
R 960	RS1/16S473J	C 531	CKSQYB182K50
R 961	RS1/10S103J	C 532	CKSQYB223K50
R 962	RS1/10S473J	C 533	CKSQYB123K50
R 963	RS1/10S472J	C 534	CKSQYB123K50
R 964	RS1/10S103J	C 535	CKSQYB472K50
R 965	RS1/10S473J	C 536	CCSQCH101J50
R 966	RS1/10S473J	C 537	CCSQCH101J50
R 967	RS1/8S222J	C 541	CKSQYB472K50
R 968	RS1/10S102J	C 551	CKSYB474K16
R 970	RS1/10S1R0J	C 552	CKSYB474K16
R 971	RS1/10S473J	C 553	CKSYB474K16
R 972	RS1/10S103J	C 554	CKSYB474K16
R 973	RS1/16S473J	C 555	CEJA330M10
R 974	RS1/10S103J	C 557	CKSYB225K16
R 975	RS1/16S473J	C 558	CEJA100M16
R 976	RS1/10S152J	C 559	CKSYB104K50
R 991	RD1/4PU221J	C 560	CCH1330
R 992	RD1/4PU221J	C 561	CKSQYB473K50
R 993	RS1/10S472J	C 563	CKSYB474K16
R 994	RS1/10S222J	C 564	CKSYB474K16
CAPACITORS		C 565	CKSYB474K16
C 411	CKSQYB104K50	C 566	CKSYB474K16
C 412	CKSQYB473K50	C 567	CKSYB225K16
C 413	CKSYB105K16	C 601	CCSQCH270J50
C 414	CKSYB105K16	C 602	CCSQCH270J50
C 415	CKSYB105K16	C 603	CKSYB105K16
C 416	CKSYB105K16	C 604	CEAL4R7M35
C 431	CEJA100M16	C 607	CCSQCH101J50
C 432	CEJA100M16	C 608	CCSQCH101J50
C 443	CEJA220M16	C 609	CCSQCH101J50
C 451	CKSYB224K25	C 610	CCSQCH101J50
C 452	CKSYB224K25	C 611	CCSQCH101J50
C 453	CKSYB474K16	C 612	CEAL2R2M50
C 454	CKSYB474K16	C 651	CCSQCH101J50
C 455	CEJANP4R7M16	C 652	CEAL4R7M35
C 456	CEJANP4R7M16	C 654	CKSYB103K50
C 457	CEJANP4R7M16	C 670	CKSQYB473K50
C 458	CEJANP4R7M16	C 675	CCSQCH101J50
C 459	CKSQYB473K50	C 701	CEJA220M6R3
C 460	CKSQYB473K50	C 702	CKSQYB104K50
C 461	CKSQYB473K50	C 703	CEJA220M6R3
C 462	CKSQYB473K50	C 704	CKSQYB104K50
C 463	CEJA470M10	C 705	CCSQCH270J50
C 464	CKSQYB104K50	C 706	CCSQCH270J50
C 465	CEJA100M16	C 707	CKSQYB104K50
C 466	CKSQYB153K50	C 708	CKSQYB471K50
C 467	CKSQYB473K50	C 709	CKSQYB471K50
C 468	CKSQYB123K50	C 710	CKSQYB103K50
C 469	CKSQYB333K50	C 951	CCH1325
C 470	CKSQYB153K50	C 952	CKSQYB473K50
C 491	CKSQYB152K50	C 953	CEJA101M10
C 492	CKSQYB152K50	C 954	CKSQYB473K50
C 501	CKSQYB103K50	C 955	CEJA101M16
C 502	CKSQYB223K50	C 956	CKSQYB103K50
C 503	CKSQYB223K50	C 957	CCH1326
C 504	CEJA220M16	C 958	CKSQYB102K50
C 505	CKSQYB102K50	C 959	CKSQYB105K16
C 506	CEAL101M6R3	C 960	CKSQYB103K50
C 507	CKSQYB473K50	C 989	CCH1183
C 521	CKSRYB102K50	C 991	CKSQYB473K50
C 522	CEJA101M16	C 992	CKSQYB102K50
		C 993	CEJA101M10

====Circuit Symbol and No.===Part Name

Part No.

C Unit Number : CWM6906(P5100R)
 : CWM6910(P5100R-W)
 Unit Name : Keyboard Unit

MISCELLANEOUS

IC	901	IC	PD6279A
IC	902	IC	RS-140
Q	901	Transistor	2SB710A
Q	902	Transistor	DTC114EU
Q	903	Transistor	2SB710A
Q	904	Transistor	DTC114EU
Q	905	Transistor	DTC114EU
Q	906	Transistor	DTC114EU
D	901	Diode	DAN202U
D	902	Diode	DAP202U
D	903	LED	CL170UBX
D	904	LED	CL170UBX
D	907	LED	CL170PGCD(AB)
D	908	LED	CL170DCD
D	909	LED	NSSW440-9159
D	910	LED	NSSW440-9159
D	911	LED	NSSW440-9159
D	912	LED	NSSW440-9159
L	901	Inductor	LCTA101J3225
X	901	Radiator 5.00MHz	CSS1423
S	902	Push Switch	CSG1113
S	903	Push Switch	CSG1113
S	904	Spring Switch	CSN1052
S	905	Spring Switch	CSN1051
S	906	Push Switch	CSG1113
S	907	Push Switch	CSG1113
S	908	Push Switch	CSG1113
S	909	Push Switch	CSG1113
S	910	Push Switch	CSG1113
S	911	Push Switch	CSG1113
S	912	Push Switch	CSG1113
S	913	Push Switch	CSG1113
S	914	Push Switch	CSG1113
S	915	Push Switch	CSG1113
S	916	Push Switch	CSG1113
S	917	Push Switch	CSG1113
S	918	Push Switch	CSG1113
S	919	Push Switch	CSG1113
S	920	Push Switch	CSG1113
S	921	Push Switch	CSG1113
S	922	Switch	CSD1040
LCD	901	LCD(P5100R)	CAW1566
LCD	901	LCD(P5100R-W)	CAW1573

RESISTORS

R	901	RS1/10S222J
R	902	RS1/10S222J
R	903	RS1/10S472J
R	904	RS1/10S121J
R	905	RS1/10S2R2J
R	906	RS1/10S470J
R	907	RS1/10S470J
R	908	RS1/10S472J
R	909	RS1/8S751J
R	910	RS1/8S751J
R	911	RS1/8S561J
R	912	RS1/8S561J
R	913	RS1/8S561J
R	914	RS1/8S561J
R	915	RS1/8S561J

====Circuit Symbol and No.===Part Name

Part No.

R	916	RS1/8S561J
R	917	RS1/8S561J
R	918	RS1/8S561J
R	919	RS1/8S561J
R	920	RS1/8S561J

R	921	RS1/8S561J
R	922	RS1/8S561J
R	924	RS1/10S473J
R	925	RS1/10S272J
R	926	RS1/10S473J

R	927	RS1/10S272J
R	930	RS1/10S103J
R	931	RS1/8S821J
R	932	RS1/8S821J
R	933	RS1/8S821J

R	934	RS1/8S821J
R	935	RS1/8S152J
R	936	RS1/8S152J
R	937	RS1/8S152J
R	938	RS1/10S431J

R 939

RS1/10S431J

CAPACITORS

C	901	CSZSR100M16
C	902	CKSQYB104K50
C	903	CSZSR100M16
C	904	CKSQYB103K50
C	905	CKSQYB103K50

C	906	CKSQYB103K50
C	907	CKSQYB104K50
C	908	CKSQYB104K50
C	909	CKSQYB104K50
C	910	CKSQYB104K50

C	913	CKSQYB104K50
C	914	CKSQYB104K50

C Unit Number : CWM6907(P5100R-B)
 Unit Name : Keyboard Unit

MISCELLANEOUS

IC	901	IC	PD6279A
IC	902	IC	RS-140
Q	906	Transistor	DTC114EU
D	901	Diode	DAN202U
D	902	Diode	DAP202U
D	903	LED	CL170UBX
D	904	LED	CL170UBX
D	908	LED	CL170SRCD
D	909	LED	NSSW440-9159
D	910	LED	NSSW440-9159

D	911	LED	NSSW440-9159
D	912	LED	NSSW440-9159
L	901	Inductor	LCTA101J3225
X	901	Radiator 5.00MHz	CSS1423
S	902	Push Switch	CSG1135

S	903	Push Switch	CSG1135
S	904	Spring Switch	CSN1052
S	905	Spring Switch	CSN1051
S	906	Push Switch	CSG1135
S	907	Push Switch	CSG1135

S	908	Push Switch	CSG1135
S	909	Push Switch	CSG1135
S	910	Push Switch	CSG1135
S	911	Push Switch	CSG1135
S	912	Push Switch	CSG1135

====Circuit Symbol and No.==Part Name	Part No.
S 913 Push Switch	CSG1135
S 914 Push Switch	CSG1135
S 915 Push Switch	CSG1135
S 916 Push Switch	CSG1135
S 917 Push Switch	CSG1135
S 918 Push Switch	CSG1135
S 919 Push Switch	CSG1135
S 920 Push Switch	CSG1135
S 921 Push Switch	CSG1135
S 922 Switch	CSD1040
LCD 901 LCD	CAW1600
RESISTORS	
R 901	RS1/10S222J
R 902	RS1/10S222J
R 903	RS1/10S472J
R 904	RS1/10S121J
R 905	RS1/10S2R2J
R 906	RS1/10S470J
R 907	RS1/10S470J
R 909	RS1/8S751J
R 910	RS1/8S751J
R 911	RS1/8S561J
R 912	RS1/8S561J
R 913	RS1/8S561J
R 914	RS1/8S561J
R 915	RS1/8S561J
R 916	RS1/8S561J
R 917	RS1/8S561J
R 918	RS1/8S561J
R 919	RS1/8S561J
R 920	RS1/8S561J
R 921	RS1/8S561J
R 922	RS1/8S561J
R 928	RS1/8S0R0J
R 930	RS1/10S103J
R 931	RS1/8S821J
R 932	RS1/8S821J
R 933	RS1/8S821J
R 934	RS1/8S821J
R 935	RS1/8S152J
R 936	RS1/8S152J
R 937	RS1/8S152J
R 938	RS1/10S431J
R 939	RS1/10S431J

CAPACITORS

C 901	CSZSR100M16
C 902	CKSQYB104K50
C 903	CSZSR100M16
C 904	CKSQYB103K50
C 905	CKSQYB103K50
C 906	CKSQYB103K50
C 907	CKSQYB104K50
C 908	CKSQYB104K50
C 909	CKSQYB104K50
C 910	CKSQYB104K50
C 913	CKSQYB104K50
C 914	CKSQYB104K50

====Circuit Symbol and No.==Part Name	Part No.
B Unit Number : CWE1500	
Unit Name : FM/AM Tuner Unit	

MISCELLANEOUS

IC 1	IC	PML002A
IC 2	IC	PM4008A
IC 3	IC	BR9010FV
Q 1	Transistor	2SC4081
Q 2	Transistor	DTC124EU
Q 3	FET	3SK263
Q 51	Transistor	2SC4081
Q 201	FET	2SK932
Q 202	Transistor	DTC124EU
Q 204	Transistor	2SC4081
D 1	Diode	KV1410(23)
D 2	Diode	1SV248
D 4	Diode	KV1410(23)
D 6	Diode	KV1410(23)
D 101	Diode	1SS355
D 201	Diode	DAN217U
D 202	Diode	DAN217U
D 903	Diode	KV1410(23)
D 904	Diode	SVC253
L 1	Coil	CTC1155
L 2	Coil	CTC1155
L 3	Inductor	LCTB100K2125
L 4	Coil	CTC1155
L 201	Inductor	LCTB330M1608
L 202	Inductor	CTF1287
L 203	Inductor	LCTA121J3225
L 901	Coil	CTC1154
L 902	Inductor	LCTA3R3J3225
L 904	Inductor	LCTBR47M1608
L 905	Inductor	LCTBR47M1608
T 51	Coil	CTE1132
CF 51	Ceramic Filter	CTF1442
CF 52	Ceramic Filter	CTF1442
CF 53	Ceramic Filter	CTF1442
CF 202	Ceramic Filter	CTF1348
X 901	Crystal Resonator 10.250MHz	CSS1432

RESISTORS

R 1	RS1/16S153J
R 2	RS1/16S103J
R 6	RS1/16S103J
R 7	RS1/16S273J
R 8	RS1/16S473J
R 9	RS1/16S223J
R 10	RS1/16S473J
R 11	RS1/16S221J
R 12	RS1/16S103J
R 13	RS1/16S104J
R 16	RS1/16S223J
R 17	RS1/16S221J
R 18	RS1/16S221J
R 19	RS1/16S473J
R 20	RS1/16S470J
R 51	RS1/16S470J
R 52	RS1/16S103J
R 53	RS1/16S103J
R 54	RS1/16S331J
R 55	RS1/16S331J
R 56	RS1/16S560J
R 57	RS1/16S560J
R 58	RS1/16S102J
R 59	RS1/16S225J
R 60	RS1/16S133J

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
R 61	RS1/16S433J	C 102	CCSRCH151J50
R 62	RS1/16S562J	C 103	CKSRYB473K16
R 101	RS1/16S333J	C 105	CKSRYB682K25
R 102	RS1/16S103J	C 106	CEAL2R2M50
R 103	RS1/16S333J	C 107	CKSRYB103K50
R 104	RS1/16S562J	C 108	CKSQYB474K16
R 110	RS1/16S154J	C 109	CKSQYB474K16
R 111	RS1/16S273J	C 110	CKSRYB104K16
R 112	RS1/16S223J	C 111	CKSRYB104K16
R 113	RS1/16S222J	C 112	CKSRYB104K16
R 114	RS1/16S333J	C 113	CKSRYB123K25
R 115	RS1/16S334J	C 114	CEAL220M6R3
R 116	RS1/16S473J	C 115	CKSRYB473K16
R 117	RS1/16S333J	C 116	CEAL2R2M50
R 118	RS1/16S223J	C 117	CKSRYB102K50
R 122	RS1/16S0R0J	C 120	CKSRYB153K25
R 202	RS1/16S472J	C 121	CKSRYB332K50
R 203	RS1/16S225J	C 122	CKSRYB682K25
R 204	RS1/16S102J	C 123	CKSRYB681K50
R 205	RS1/16S220J	C 125	CKSRYB103K50
R 206	RS1/16S471J	C 126	CKSRYB103K50
R 208	RS1/16S104J	C 127	CEAL2R2M50
R 209	RS1/16S104J	C 128	CKSRYB103K50
R 210	RS1/16S563J	C 201	CCSRCH471J50
R 213	RS1/16S223J	C 202	CCSRCH100D50
R 251	RS1/16S225J	C 203	CKSRYB104K16
R 902	RS1/16S103J	C 204	CKSRYB332K50
R 904	RS1/16S473J	C 205	CKSRYB103K50
R 907	RS1/16S103J	C 206	CKSRYB104K16
R 908	RS1/16S681J	C 207	CKSRYB473K16
R 909	RS1/16S473J	C 208	CCSRCH560J50
R 914	RS1/16S562J	C 209	CEAL470M6R3
CAPACITORS		C 210	CKSRYB103K50
C 1	CCSQCH5R0C50	C 211	CKSRYB103K50
C 2	CCSRCH5R0C50	C 212	CCSRCH101J50
C 4	CCSRCJ3R0C50	C 215	CKSRYB223K25
C 6	CKSQYB105K10	C 216	CKSQYB334K16
C 8	CKSRYB222K50	C 217	CKSRYB103K50
C 10	CCSRCH220J50	C 219	CKSQYB105K10
C 11	CCSRCH150J50	C 220	CKSRYB104K16
C 12	CCSRCH8R0D50	C 221	CKSRYB473K16
C 14	CCSRCJ3R0C50	C 222	CKSQYB334K16
C 15	CKSRYB103K50	C 223	CKSQYB474K16
C 16	CKSRYB222K50	C 224	CKSRYB104K16
C 17	CKSRYB222K50	C 225	CKSRYB272K50
C 18	CCSRCJ3R0C50	C 226	CKSRYB682K25
C 19	CKSRYB103K50	C 902	CCSRCH270J50
C 20	CKSRYB103K50	C 904	CKSRYB223K25
C 21	CKSRYB103K50	C 905	CKSRYB103K50
C 24	CKSQYB334K16	C 906	CCSRTH100D50
C 31	CKSRYB222K50	C 907	CCSRTH150J50
C 32	CCSRCH470J50	C 909	CCSRTH100D50
C 35	CKSRYB103K50	C 910	CKSRYB332K50
C 51	CKSRYB103K50	C 912	CKSQYB474K16
C 52	CKSRYB473K16	C 913	CKSRYB223K25
C 53	CCSRCK2R0C50	C 914	CKSRYB682K25
C 54	CKSRYB103K50	C 915	CKSQYB223K25
C 55	CKSRYB104K16	C 916	CKSQYB474K16
C 56	CKSRYB104K16	C 917	CKSYB475K10
C 58	CKSQYB224K16	C 918	CKSRYB223K25
C 59	CKSRYB223K25	C 919	CKSQYB225K10
C 60	CKSRYB104K16	C 920	CCSRCH270J50
C 101	CEALNP100M10	C 921	CCSRCH270J50
		C 922	CKSYB105K16
		C 923	CKSRYB103K50

====Circuit Symbol and No.==Part Name Part No.

F Unit Number : CWM7157
Unit Name : Panel PCB Unit

MISCELLANEOUS

D	920	LED	CL220PGC
D	921	LED	CL220PGC
S	930	Switch(EJECT)	CSG1112

D Unit Number : CWX2411
Unit Name : Control Unit

MISCELLANEOUS

IC	201	IC	UPD63711GC
IC	301	IC	BA5985FM
IC	701	IC	BA05SFP
Q	101	Transistor	2SB1132
D	801	LED	CL200IRX

D	802	LED	CL200IRX
X	201	Ceramic Oscillator 16.934MHz	CSS1456
S	801	Spring Switch(HOME)	CSN1051
S	802	Spring Switch(CLAMP)	CSN1052

RESISTORS

R	101	RS1/8S120J
R	102	RS1/8S100J
R	103	RS1/16S222J
R	201	RS1/16S104J
R	202	RS1/16S103J

R	203	RS1/16S393J
R	204	RS1/16S103J
R	205	RS1/16S103J
R	206	RS1/16S182J
R	207	RS1/16S123J

R	302	RS1/16S153J
R	303	RS1/16S103J
R	501	RS1/16S102J
R	502	RA4C681J
R	601	RS1/16S102J

R	602	RS1/16S102J
R	605	RS1/16S0R0J
R	606	RS1/16S0R0J
R	801	RS1/8S751J
R	803	RS1/8S751J

R	902	RS1/16S0R0J
R	906	RS1/16S0R0J

CAPACITORS

C	101	CKSRYB102K50
C	102	CKSRYB104K16
C	103	CEV101M6R3
C	104	CEV470M6R3
C	105	CKSQYB334K16

C	106	CKSQYB334K16
C	107	CKSQYB334K16
C	201	CKSRYB104K16
C	202	CKSRYB471K50
C	203	CKSRYB104K16

C	205	CEV101M6R3
C	206	CKSRYB104K16
C	207	CKSRYB104K16
C	208	CKSRYB104K16
C	209	CKSRYB104K16

C	210	CKSRYB332K50
C	211	CKSRYB104K16
C	212	CKSRYB104K16
C	213	CKSRYB392K50
C	214	CKSRYB104K16

====Circuit Symbol and No.==Part Name Part No.

C	215	CKSRYB104K16
C	216	CCSRCJ3R0C50
C	217	CCSRCH270J50
C	218	CKSRYB104K16
C	219	CCSRCH181J50

C	220	CCSRCH510J50
C	221	CKSRYB682K25
C	222	CEV220M6R3
C	223	CKSRYB103K25
C	224	CKSRYB224K10

C	301	CEV101M10
C	603	CCSQSL152J50
C	604	CCSQSL152J50
C	702	CCH1349
C	703	CKSQYB334K16

E Unit Number :
Unit Name : Photo Unit(S8)

Q	1	Photo-transistor	CPT230SX-TU
Q	2	Photo-transistor	CPT230SX-TU

Miscellaneous Parts List

M	1	Pickup Unit(Service)(P8)	CXX1285
M	1	Motor Unit(CARRIAGE)	CXB2190
M	2	Motor Unit(LOADING)	CXB2195
M	3	Motor Unit(SPINDLE)	CXB2562

6. ADJUSTMENT

6.1 CD ADJUSTMENT

1) Precautions

- This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFO(approx. 2.5V) instead of GND.

If REFO and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.

Do not connect the negative probe of the measuring equipment to REFO and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFO with the channel 2 negative probe connected to GND.

Since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.

If by accident REFO comes in contact with GND, immediately switch the regulator or power OFF.

- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.
- Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.
- Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.
- Disc detection during loading and eject operations is performed by means of a photo transistor in this unit. Consequently, if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment, the following malfunctions may occur.

*During PLAY, even if the eject button is pressed, the disc will not be ejected and the unit will remain in the PLAY mode.

*The unit will not load a disc.

When the unit malfunctions this way, either re-position the light source, move the unit or cover the photo transistor.

2) Test Mode

This mode is used for adjusting the CD mechanism module of the device.

- Test mode starting procedure
Reset while pressing the 4 and 6 keys together.
- Test mode cancellation
Switch ACC, back-up OFF.
- After pressing the EJECT key, do not press any other key until the disk is completely ejected.
- If the ► or ◀ key is pressed while focus search is in progress, immediately turn the power off (otherwise the actuator may be damaged due to adhesion of the lenses).
- Jump operation of TRs other than 100TR continues after releasing the key. CRG move and 100TR jump operations are brought into the "Tracking close" status when the key is released.
- Powering Off/On resets the jump mode to "Single TR (91)", the RF AMP gain setting to 0 dB, and the automatic adjustment value to the initial value.



6.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

- Note :

The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

- Purpose :

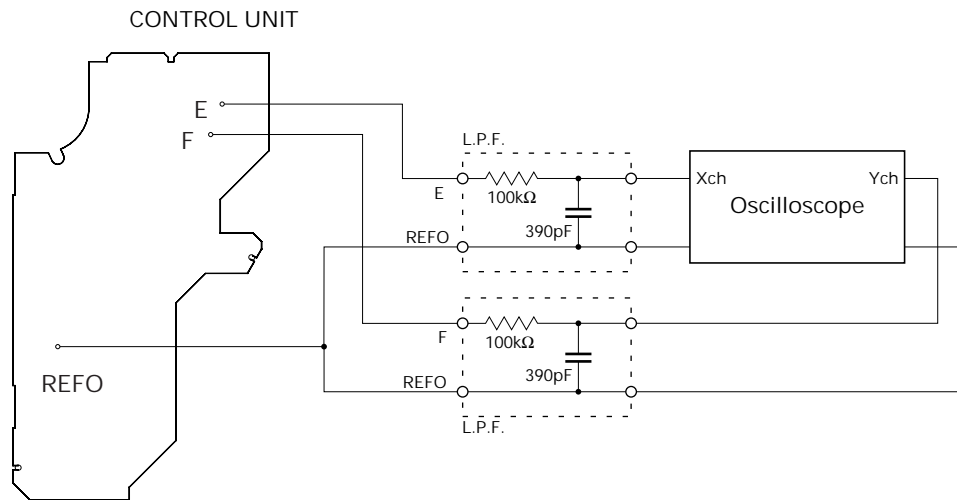
To check that the grating is within an acceptable range when the PU unit is changed.

- Symptoms of Mal-adjustment :

If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

- Method :

- | | |
|-----------------------|----------------------------|
| • Measuring Equipment | • Oscilloscope, Two L.P.F. |
| • Measuring Points | • E, F, REFOUT |
| • Disc | • ABEX TCD-784 |
| • Mode | • TEST MODE |



- Checking Procedure

1. In test mode, load the disc and switch the 5V regulator on.
2. Using the ► and ◄ buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now read "81". Press key 3 2 times. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

- Note

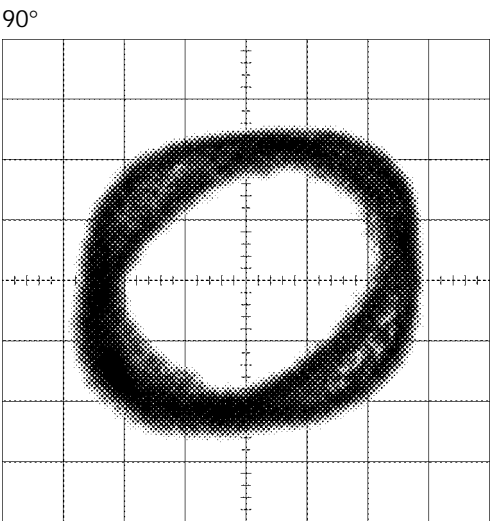
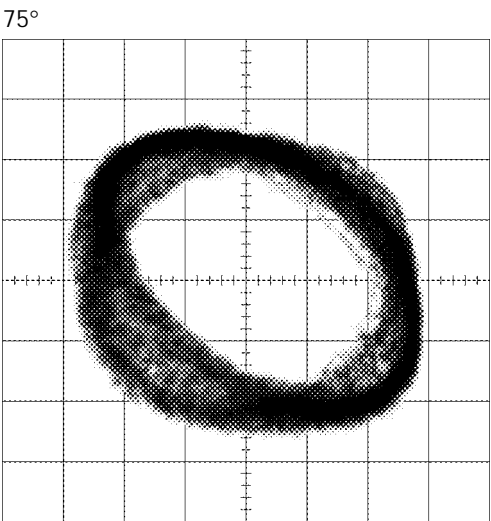
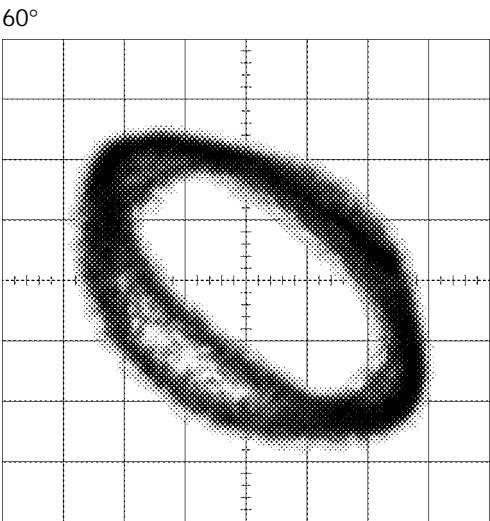
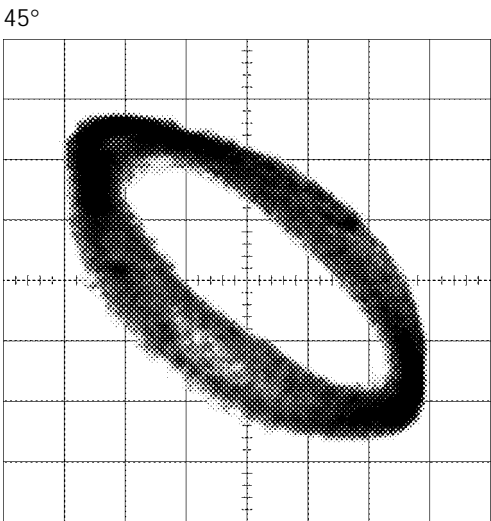
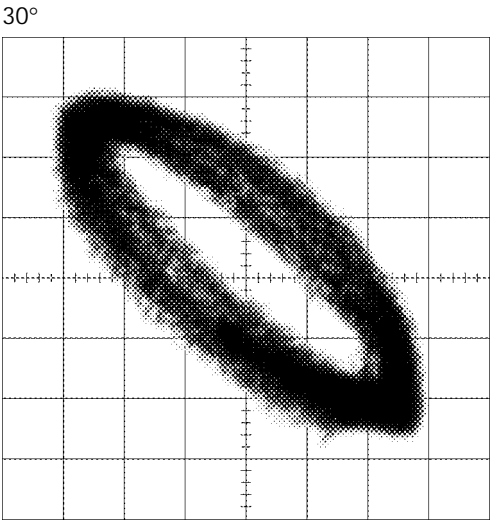
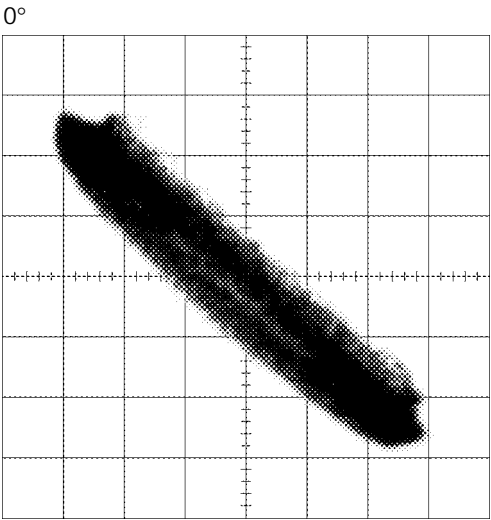
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

- Hint

Reloading the disc changes the clamp position and may decrease the "wobble".

Grating waveform

Ech → Xch 20mV/div, AC
Fch → Ych 20mV/div, AC



7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display	6-digit display	4-digit display
ERROR-xx	ERR-xx	E-xx
	OR	
	Err-xx	

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations.
		Subcode NG	A disc not containing CD-R data is found. Turned over disc are found, though rarely. → Failure on home switch or CRG move mechanism.
		RF AMP NG	An appropriate RF AMP gain can't be determined. → CD signal error.
17	Electricity	Setup NG	APC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

A newly designed head unit must conform to the example given above.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, 3x: Search relevant errors, Ax: Other errors.

● New Test Mode

S-CD plays the same way as before.

If an error such as off focus, spindle unlocking, unreadable sub-code, or sound skipping occurs after setup, its cause and time occurred (in absolute time) are displayed.

During setup, operational status of the control software (internal RAM: CPOINT) is displayed.

These displays and functions are prepared for enhancing aging in the servicing and efficiency of trouble analysis.

(1) Shifting to the New Test Mode

- ① Turn on the current test mode by starting the reset from the key.
 - ② Select S-CD for the source through the specified procedure including use of the [SOURCE] key, and inserting the disc. Then, press the [Jump Mode Selector] key while maintaining the regulator turned off.
 - ③ After the above operations, the new test mode remains on irrespective of whether the S-CD is turned on or off.
You can reset the new test mode by turning on the reset start.
- * With some products, the new test mode can be reset through the same operations as that employed for shifting to the STBY mode (while maintaining the Acc turned off).

(2) Key Correspondence

Key (Example)	Test mode		New test mode	
	Power Off	Power On	In-play	Error Production
BAND	To power on (offset adjustment performed)	To power off	–	Time/Err.No. switching
▶	–	FWD-Kick	FF/TR+	–
◀	–	REV-Kick	REV/TR-	–
1	–	T.Close (AGC performed) /parameter display switching	Scan	–
2	RF AMP gain switching	Parameter display switching /T.BAL adjustment/T.Open	Mode	–
3	To power on (offset adjustment not performed)	F.Close/RF AGC/F.T.AGC	–	–
6	–	F.Mode switching /T.Close (no AGC)/Jump switching	Auto/Manu	T.No./Time switching

Note: Eject and CD on/off is performed in the same procedure as that for the normal mode.

(3) Cause of Error and Error Code

Code	Class	Contents	Description and cause
40	Electricity	Off focus detected.	FOK goes low. → Damages/stains on disc, vibrations or failure on servo.
41	Electricity	Spindle unlocked.	FOK = Low continued for 50 msec. → Damages/stains on disc, vibrations or failure on servo.
42	Electricity	Sub-code unreadable.	Sub-code was unreadable for 50 msec. → Damages/stains on disc, vibrations or failure on servo.
43	Electricity	Sound skipping detected.	Last address memory function was activated. → Damages/stains on disc, vibrations or failure on servo.

Note: Mechanical errors during aging are not displayed.

The error codes should be indicated in the same way as in the normal mode.

(4) Display of Operational Status (CPOINT) during Setup

Status No.	Contents	Protective action
00	CD+5V ON process in progress.	None
01	Servo LSI initialization (1/3) in progress.	None
02	Servo LSI CRAM initialization in progress.	None
03	Servo LSI initialization (2/3) in progress.	None
04	Offset adjustment (1/3) in progress.	None
05	Offset adjustment (2/3) in progress.	None
06	Offset adjustment (3/3) in progress.	None
07	FZD adjustment in progress.	None
08	Servo LSI initialization (3/3) in progress.	None
10	Carriage move to home position started.	None
11	Carriage move to home position started.	None
12	Carriage is moving toward inner diameter.	Specified 10 seconds has been passed or failure on home switch.
13	Carriage is moving toward outer diameter.	Specified 10 seconds has been passed or failure on home switch.
14	Carriage outer kick in progress.	None
15	Carriage outer diameter feed (1 second) in progress.	None
20	Servo close started.	None
21	Pre-processing for focus search started.	None
22	Spindle rotation and focus search started.	None
23	Waiting for focus close (XSI=Low).	Specified focus search time has been passed.
24	Standing by after focus close is over.	Specified focus search time has been passed.
25	Focus search preprocessing is in progress while setup protection is turned on.	None
26	Focus search preprocessing is in progress while focus recovery is turned on.	None
27	Wait time after focus close is set up.	Off focus.
28	Standing by after focus close is over.	Off focus.
29	Setup (1/2) before T balance adjustment is started.	Off focus.
30	Setup (2/2) before T balance adjustment is started.	Off focus.
31	T balance adjustment started.	Off focus.
32	T balance adjustment (1/2).	Off focus.
33	T balance adjustment (2/2).	Off focus.
34	Waiting for spindle rotation to end. Spindle rough servo.	Off focus.
35	Standing by after spindle rough servo is over.	Off focus.
36	RF AGC started.	Off focus.
37	RF AGC started.	Off focus.
38	RF AGC ending process in progress.	Off focus.
39	Tracking close in progress.	Off focus.
40	Standing by after tracking is closed. Carriage closing in progress.	Off focus.
41	Focus/tracking AGC started.	Off focus.
42	Focus AGC started.	Off focus.
43	Focus AGC in progress.	Off focus.
44	Tracking AGC in progress.	Off focus.
45	Standing by after focus/tracking AGC are over.	Off focus.
46	Spindle processes applicable servo.	Off focus.
47	Check for servo close is started.	Off focus.
48	Check of LOCK pin started.	Off focus or spindle not locked.
49	RF AGC started.	Off focus.
50	RF AGC in progress.	Off focus.
51	Standing by after RF AGC is over.	Off focus.

(5) Display Examples

1) During Setup (When status no. = 11)

TRK No.	MIN.	SEC.
11	11'	11"

2) During Operation (TOC read, TRK search, Play, FF and REV)

The same as in the normal mode.

3) When a Protection Error Occurred

Switch to the following displays (A) and (B) using the [BAND] switch:

(A) Error occurrence timing display in absolute time.

An example: Error occurred in 12th tune at 34'56" in absolute time.

TRK No.	MIN.	SEC.
12	34'	56"

(B) Error No. display

An example: Error #40 (Off focus is detected)

ERROR-40

7.1.2 DISASSEMBLY

- Removing the Case Unit (not shown)

Remove the case unit.

- Removing the CD Mechanism Module (Fig.1)

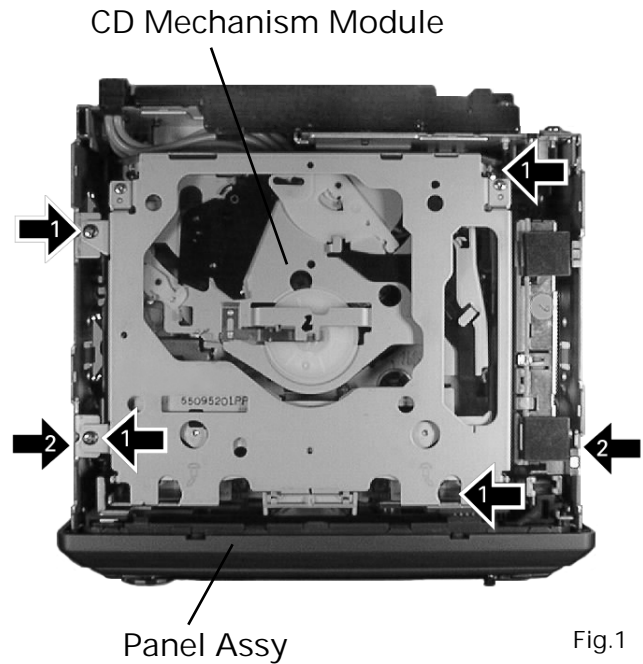
- ➡ 1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module (not shown).

- Removing the Panel Assy (Fig.1)

- ➡ 2 Remove the two screws.

Disconnect the two stoppers and then remove the Panel Assy (not shown).



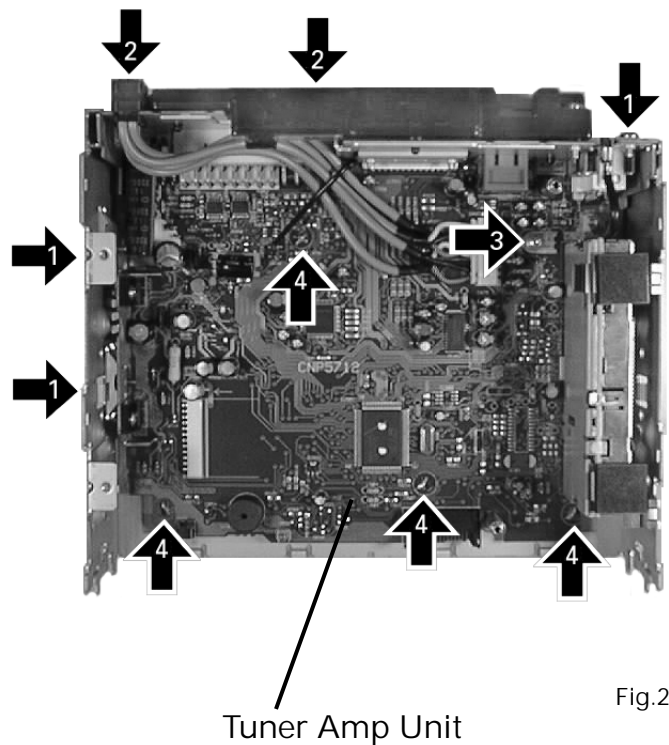
- Removing the Tuner Amp Unit (Fig.2)

- ➡ 1 Remove the three screws.

- ➡ 2 Remove the two screws.

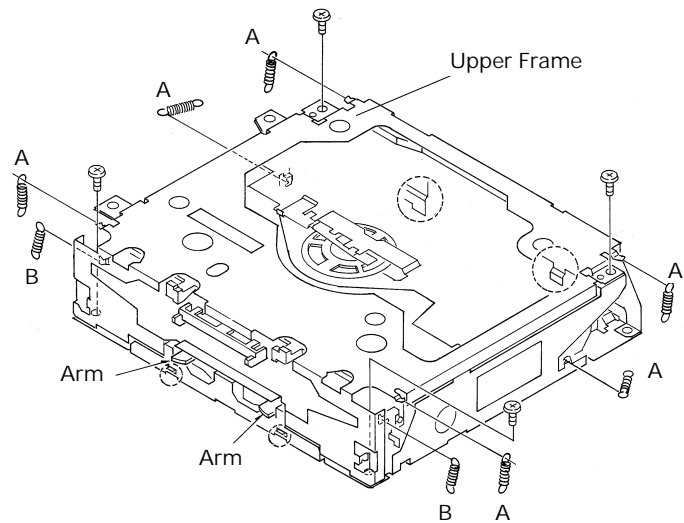
- ➡ 3 Remove the screw.

- ➡ 4 Unbend the four claws and then remove the Tuner Amp Unit.



● Removing the Upper Frame

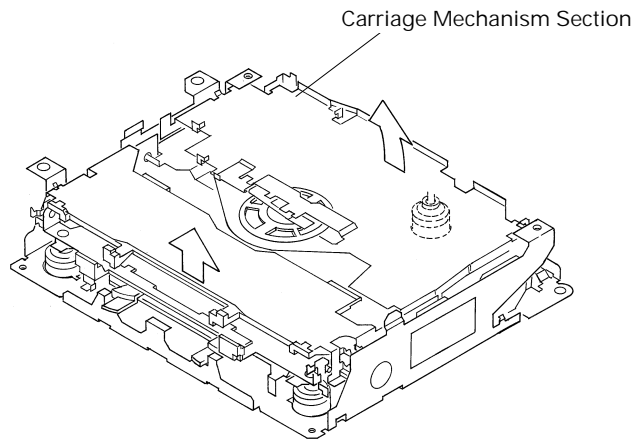
1. Remove six Springs A, two Springs B and four Screws.
2. Remove two Tabs situated on rear side of the Upper Frame, remove two Arms on the front side, then remove two Tabs on the front side.



● Removing the Carriage Mechanism

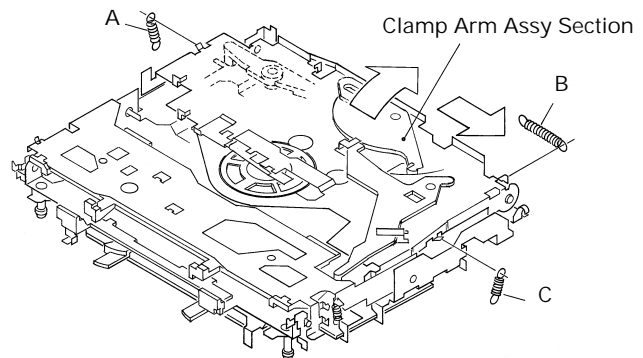
1. Disengage the Carriage Mechanism from the two dampers situated in the front side by driving it up, then disengage and remove the mechanism from the one damper by driving it up aslant into front side direction.

Note : When assembling the Carriage Mechanism, coat the dampers with alcohol prior to the assembly.



● Removing the Clamp Arm Assy

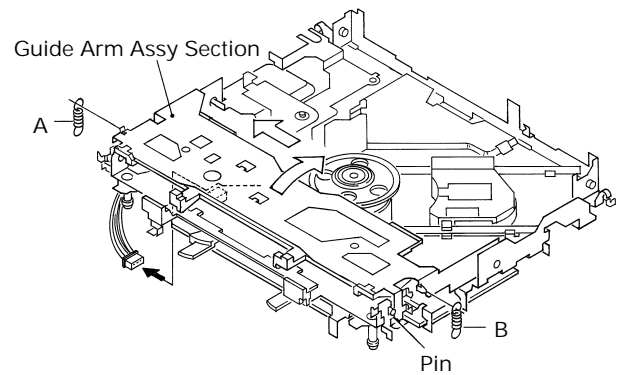
1. Remove a Spring A, a B and a Spring C.
2. Drive the Clamp Arm Assy up into rear side direction, then disengage the arm from its current position. Finally, drive the assembly approximately 45 degrees upward, then slide the assembly toward right side to remove it.



● Removing the Guide Arm Assy

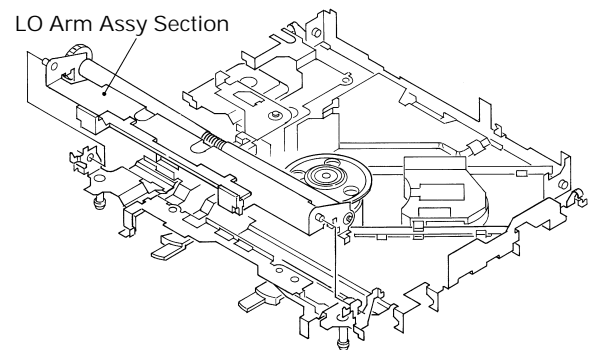
1. Remove a connector, a spring A and B
2. Drive the Guide Arm Assy up aslant into rear side direction, then remove it from a Pin. Finally, drive the assembly approximately 45 degrees upward, then slide the assembly toward left side to remove it.

Note : When assembling the guide arm assembly, route the cord inside the assembly. In this operation, care must be exercised so that cord may be caught by the gear.



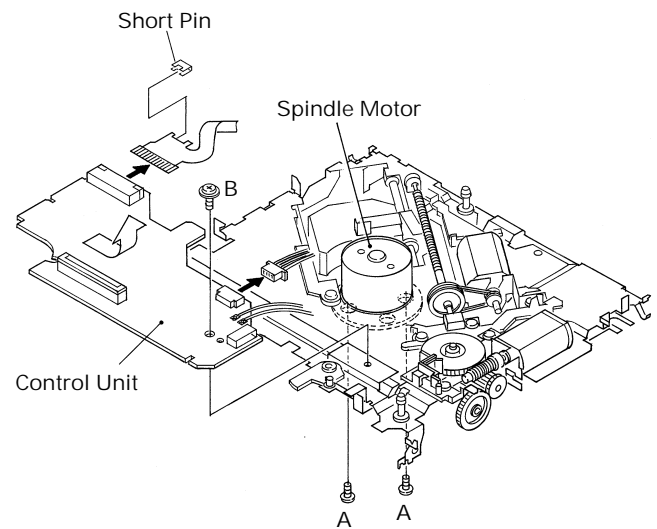
● Removing the LO Arm Assy

1. Remove two Pins to dismount the LO Arm Assy.



● Removing the Control Unit and the Spindle Motor

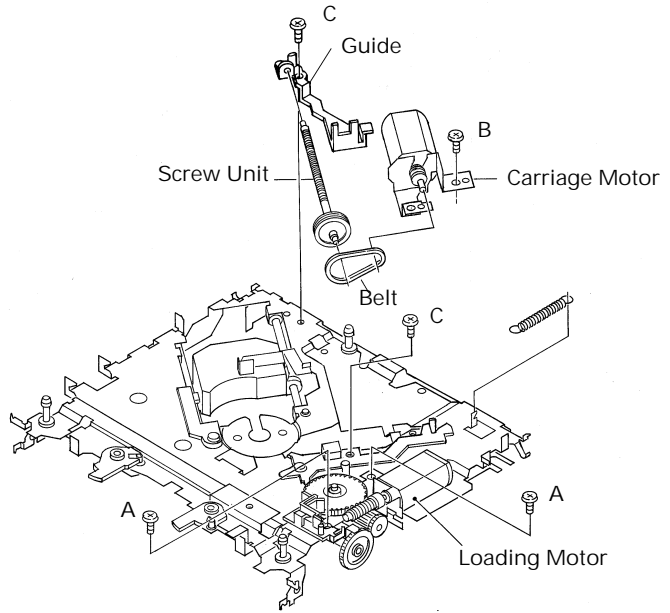
1. Remove from the connector after mounting the short pin on the flexible PCB of the pickup unit.
2. Remove two Soldered joints, then remove two Screws A.
3. Remove two connectors and a Screw B.
4. Disengage the Control Unit from two Tabs, then dismount the unit by sliding it toward left.
5. Dismount the Spindle Motor.



● Removing the Loading Motor and Carriage Motor

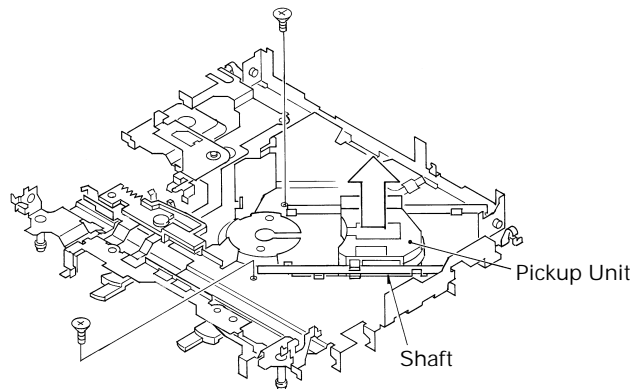
1. Remove the Spring and two Screws A.
2. Dismount the Loading Motor.
3. Remove the Belt, a Screw B, two Screws C, a Guide and a Screw Unit.
4. Dismount the Carriage Motor.

Note : When assembling the Belt, use care so that it may not be contaminated by grease.



● Removing the Pickup Unit

1. Remove two Screws and a Shaft.
2. Dismount the Pickup Unit.



7.2 PARTS

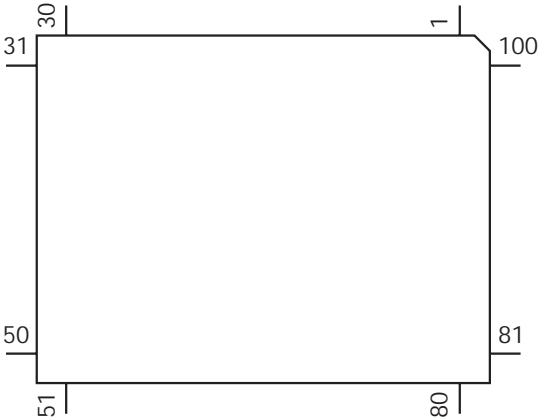
7.2.1 IC

● Pin Functions (UPD63711GC)

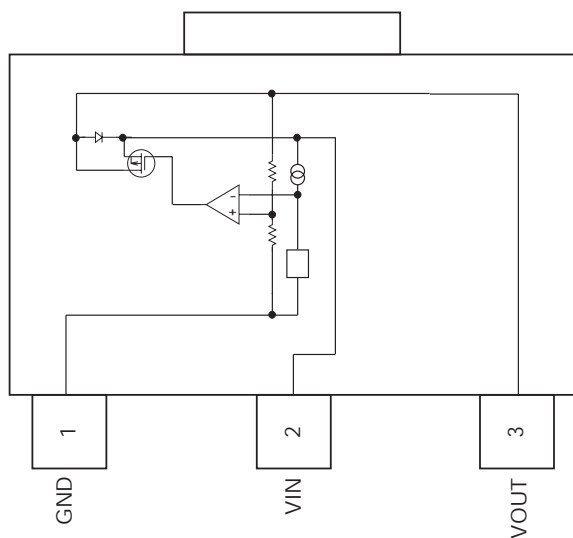
Pin No.	Pin Name	I/O	Function and Operation
1	D.GND		Logic circuit GND
2	RFOK	O	RFOK signal output
3	RST	I	Reset signal input
4	A0	I	Command/parameter identification signal input
5	STB	I	Data strobe signal input
6	SCK	I	Clock signal input for serial data input/output
7	SO	O	Serial data and status signal output
8	SI	I	Serial data input
9	XTALEN	I	Crystal oscillation control pin
10	D.VDD		Positive power supply terminal to logic circuit
11	DA.VDD		Positive power supply terminal to D/A converter
12	R_OUT	O	Right channel audio output signal
13	DA.GND		D/A converter GND
14	REGC	I	The outside putting capacitor connection pin for SCF regulator
15	DA.GND		D/A converter GND
16	L_OUT	O	Left channel audio output signal
17	DA.VDD		Positive power supply terminal to D/A converter
18	R+	O	Right channel audio data output
19	R-	O	Right channel audio data output
20	L-	O	Left channel audio data output
21	L+	O	Left channel audio data output
22	X.VDD		Positive power supply terminal to crystal oscillation circuit
23	XTAL	I	Crystal oscillator connect pin
24	XTAL	O	Crystal oscillator connect pin
25	X.GND		Crystal oscillation circuit GND
26	D.VDD		Positive power supply terminal to logic circuit
27	EMPH	O	Output pin for the pre-emphasis data in the sub-Q code
28	FLAG	O	Flag output pin to indicate that audio data currently being output consists of noncorrectable data
29	DIN	I	Serial data input to internal DAC
30	DOUT	O	Serial audio data output
31	SCKIN	I	Serial clock input to internal DAC
32	SCKO	O	Audio data that is output from DOUT changes at rising edge of this clock
33	LRCKIN	I	LRCK signal input to internal DAC
34	LRCK	O	Signals to distinguish the right and left channels of the audio data output from DOUT
35	HOLD	O	Defect detection output
36	TX	O	Digital audio interface data output
37	D.GND		Logic circuit GND
38	C16M	O	Oscillator clock buffering output
39	LIMIT	I	Status of the pin is output at Bit 5 of the status output
40	D.VDD		Positive power supply terminal to logic circuit
41	LOCK	O	EFM synchronous detection signal
42	RFCK	O	Frame synchronous signal of XTAL-system
43	MIRR	O	MIRR output
44	PLCK	O	Monitor pin of bit clock
45	D.GND		Logic circuit GND
46	C1D1	O	Output pin for indicating the C1 error correction results
47	C1D2	O	Output pin for indicating the C1 error correction results
48	C2D1	O	Output pin for indicating the C2 error correction results
49	C2D2	O	Output pin for indicating the C2 error correction results
50	C2D3	O	Output pin for indicating the C2 error correction results
51	D.VDD		Positive power supply terminal to logic circuit
52	PACK	O	CD-TEXT PACK synchronous signal
53	TSO	O	CD-TEXT data serial output
54	TSI	I	CD-TEXT control parameter serial input
55	TSCK	I	CD-TEXT serial clock input

Pin No.	Pin Name	I/O	Function and Operation
56	TSTB	I	CD-TEXT parameter strobe signal input
57	D.GND		Logic circuit GND
58	TEST0	I	Test pin
59	TEST1	I	Test pin
60	ATEST	O	Test pin
61	A.GND		Analog circuit GND
62	FD	O	Focus drive output
63	TD	O	Tracking drive output
64	SD	O	Sled drive output
65	MD	O	Spindle drive output
66	DAC0	O	DAC output for adjustment
67	DAC1	O	DAC output for adjustment
68	DAC2	O	DAC output for adjustment
69	DAC3	O	DAC output for adjustment
70	A.VDD		Positive power supply terminal to analog circuit
71	EFM	O	EFM signal output
72	ASY	I	EFM comparator reference voltage input
73	C3T		3T detection capacitor additional pin
74	RFI	I	RF signal input for EFM data regulation
75	AGCO	O	RF signal output of after gain adjustment
76	AGCI	I	RF-AGC amplifier input
77	RFO	O	RF summing amplifier output
78	EQ2		RF amplifier equalizer parts additional pin
79	EQ1		RF amplifier equalizer parts additional pin
80	RF-	I	RF summing amplifier inverted input
81	A.GND		Analog circuit GND
82	A	I	Photo detector A input
83	C	I	Photo detector C input
84	B	I	Photo detector B input
85	D	I	Photo detector D input
86	F	I	Photo detector F input
87	E	I	Photo detector E input
88	A.VDD		Positive power supply terminal to analog circuit
89	REFOUT	O	Reference electric potential output
90	FE-	I	Focus error amplifier inverted input
91	FEO	O	Focus error amplifier output
92	TE-	I	Tracking error amplifier inverted input
93	TEO	O	Tracking error amplifier output
94	TE2	O	Tracking error output of after amplification
95	TEC	I	Tracking comparator input
96	A.GND		Analog circuit GND
97	PD	I	PD detection signal input for LD output monitor
98	LD	O	LD control current output
99	PN	I	APC circuit control polarity set pin
100	A.VDD		Positive power supply terminal to analog circuit

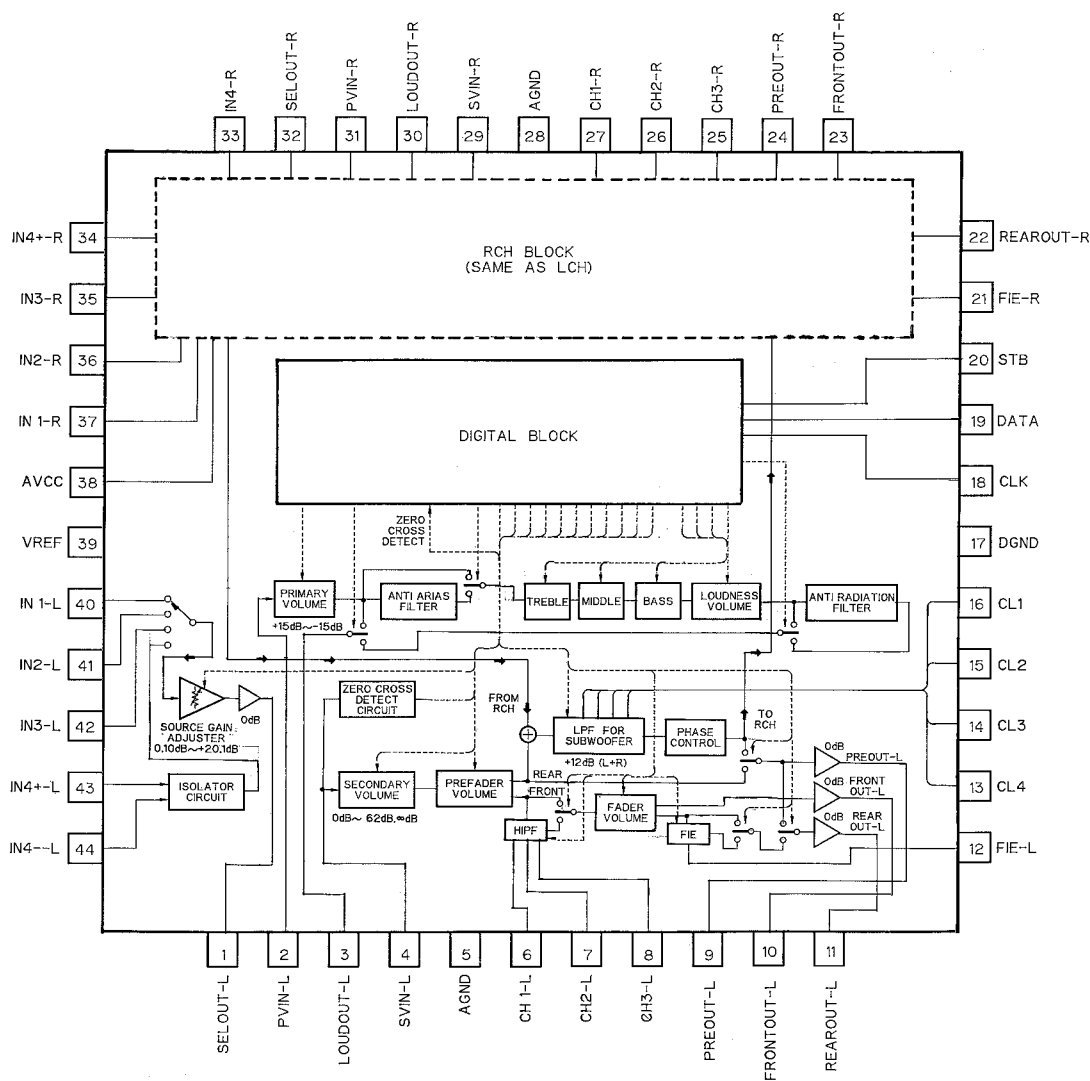
*UPD63711GC



S-81250SGUP



PML004AF

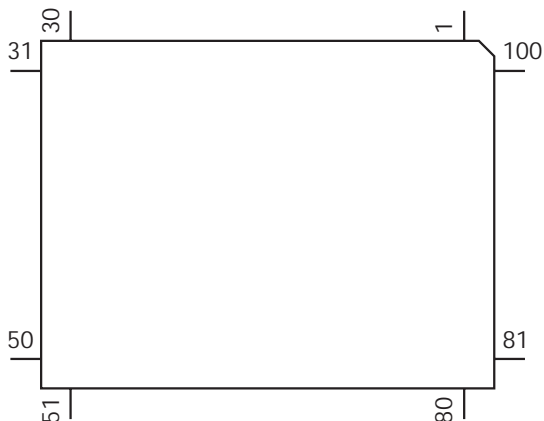


● Pin Functions (PE5116B)

Pin No.	Pin Name	I/O	Function and Operation
1	SWVDD	O	Keyboard unit power supply control output
2	DSSENS	I	Grille detach sense input
3	NL2DT	I	RDS noise level input 2
4	MODELIN		Model select input
5	TESTIN	I	Test program mode input
6	DRST	O	RDS reset output
7	TELIN	I	Telephone mute input
8	MODEL3	I	Model select 3
9	RECIVE	O	RDS decoder receiving output
10	SDBW	I	SDBW input
11	RESET	I	Reset input
12	XT2		Not used (open)
13	XT1		Connect to VSS
14	VSS		GND
15	X2		Crystal oscillator connection pin
16	X1		Crystal oscillator connection pin
17	REGOFF		Connect to VSS
18	REGC		Connect to VSS
19	VDD		Power supply
20	ILMPW	O	Illumination power supply control output
21	SYSPW	O	System power control output
22	ADPW	O	A/D converter power supply control output
23	LCDPW	O	LCD back light power supply control output
24	IPPW	O	Power supply control output for IP BUS interface IC
25	ASENBO	O	Slave power supply control output
26	ROMDATA	O	ROM collection data output
27	ROMCLK	O	ROM collection clock output
28	MUTE	O	System mute output
29	FM/AM	O	RDS decoder power supply control output
30	LOCL	O	Local L output
31	LOCH	O	Local H output
32	TUNPCE2	O	EEPROM chip enable output
33	VCK	O	Clock output for electronic volume
34	VST	O	Strobe pulse output for electronic volume
35	VDT	O	Data output for electronic volume
36	TMUTE	O	Tuner mute output
37	ROMCS	O	ROM collection chip select output
38	SD	I	Station detector input
39	ST	I	FM stereo input
40	VSS		GND
41	VDD		Power supply
42	DIM	O	DIMMER select output
43	CSSENS	I	Flap close sense input
44	RDSLK	I	RDS LK input
45	CURRO	O	Tuner voltage FIX output
46	RDT		RDS data input
47	DRELAY	O	External relay control output
48	DRSENS	I	Door open/close sense input
49	DRSYS	O	Door system select output
50	DLED	O	Alarm LED output
51	DLSSENS	I	Door lock sense input
52	NC		Not used
53	MOSENS	I	Motion/window damage sensor input
54	CD5VON	O	CD +5V power supply control output
55	CONT	O	CD servo driver power supply control output
56	VDCONT	O	CD VD power control output
57	CDMUTE	O	CD mute control output
58	CDEJET	O	CD load motor eject control output

Pin No.	Pin Name	I/O	Function and Operation
59	CDLOAD	O	CD LOAD motor loading control output
60	LOCK	I	CD spindle lock detector input
61	FOK	I	CD focus OK signal input
62	PCL	O	Clock adjustment output
63	MIRR	I	CD mirror detection input
64	CLAMP	I	CD disc clamp input
65	XSCK	O	CD LSI clock output
66	XSI	I	CD LSI data input
67	XSO	O	CD LSI data output
68	XA0	O	CD LSI command / data control output
69	XRST	O	CD LSI reset control output
70	XSTB	O	CD LSI strobe output
71,72	NC		Not used
73	TEST(GND)	I	GND
74	SL	I	Signal level input
75	EJECT	I	Eject sense input
76	NL1	I	RDS noise level input 1 (A/D)
77	FLPILM	I	Flap illumination input
78	EJTSNS	I	CD disc EJECT position detect input
79	DSCSNS	I	CD disc insert sense input
80	VDSENS	I	VD voltage sense input
81	TEMP	I	Temperature sense input (CD)
82	VDD		A/D converter power supply terminal
83	VDD		A/D converter reference voltage terminal
84	GND		GND
85	RX	I	IP BUS data input
86	TX	O	IP BUS data output
87	GND		GND
88	LDET	I	PLL lock sense input
89	RCK	I	RDS clock input
90	RDS57K	I	RDS 57kHz pulse count input
91	ISENS	I	Illumination sense input
92	ASENS	I	ACC power sense input
93	BSENS	I	Back up power sense input
94	TUNPDI	I	PLL IC data input
95	KYDT	I	Grille data input
96	DPDT	O	Grille data output
97	TUNPCK	O	PLL IC clock output
98	TUNPDO	O	PLL IC data output
99	TUNPCE	O	PLL IC chip enable output
100	PEE	O	Beep tone output

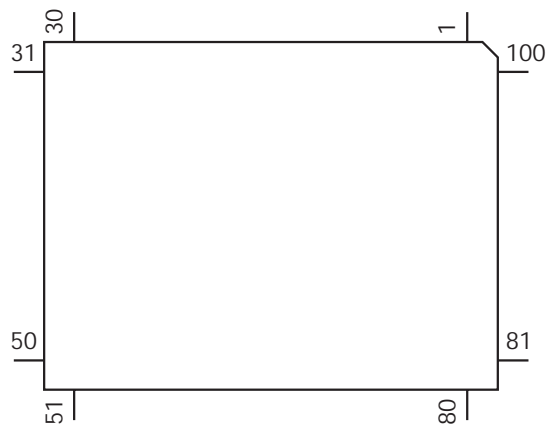
*PE5116B



● Pin Functions (PD6279A)

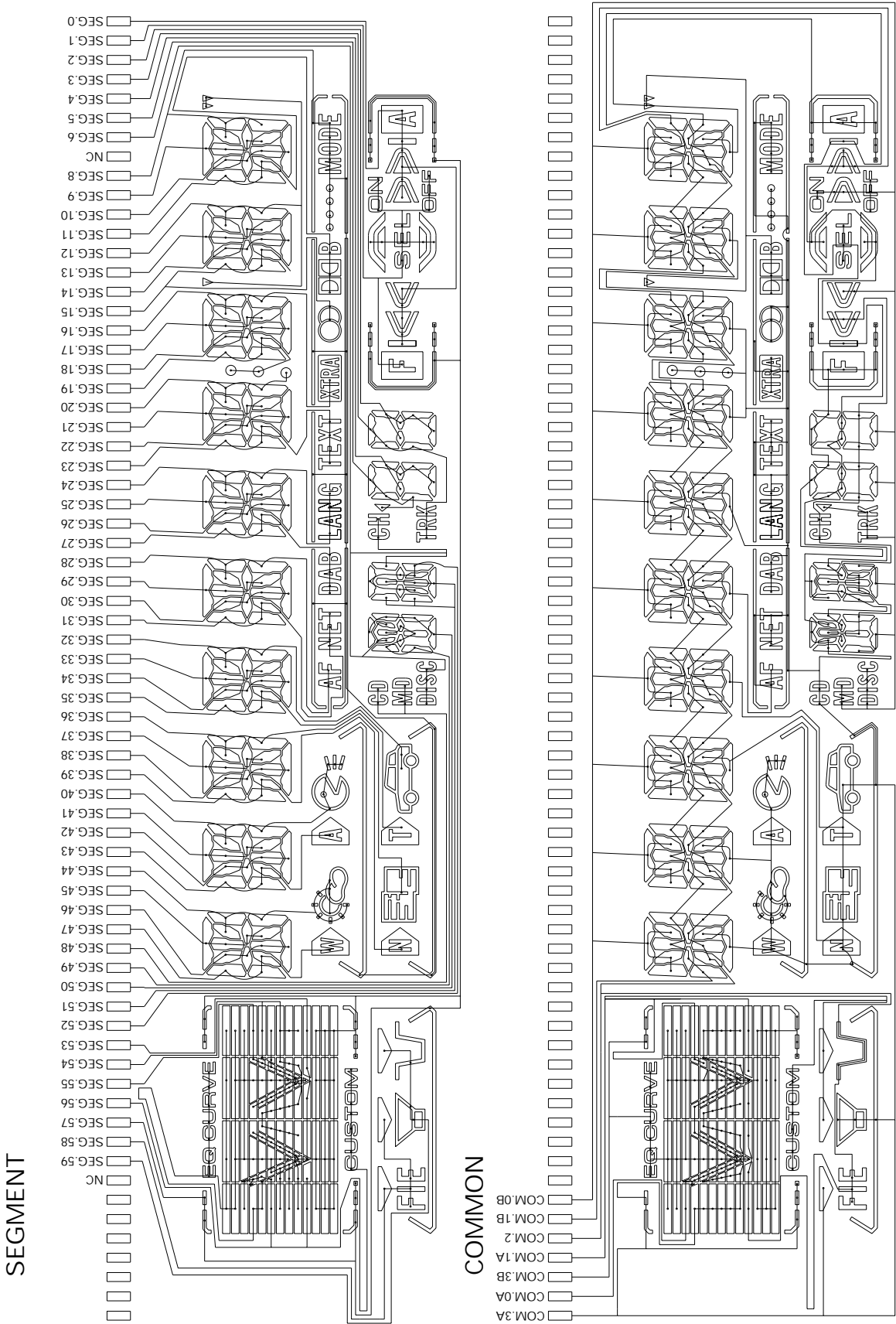
Pin No.	Pin Name	I/O	Function and Operation
1-42	SEG41-0	O	LCD segment output
43-46	COM3-0	O	LCD common output
47-49	V1-V3		LCD bias power supply
50	VCC		Power supply terminal
51	LED	O	LED control output
52	SO	O	System micro computer UART communication data output
53	SI	I	System micro computer UART communication data input
54,55	MOD0,1		GND
56	RST	I	Reset signal input terminal
57	X0		Crystal oscillator connection pin
58	X1		Crystal oscillator connection pin
59	VSS		GND
60	REMIN	I	Remote control reception input
61	DIM	O	Dimmer select output
62	GRN/AMB	O	Illumination color select output
63-66	KDT4-1	I	Key data input
67-72	KST6-1	O	Key strobe output
73-100	SEG69-42	O	LCD segment output

*PD6279A

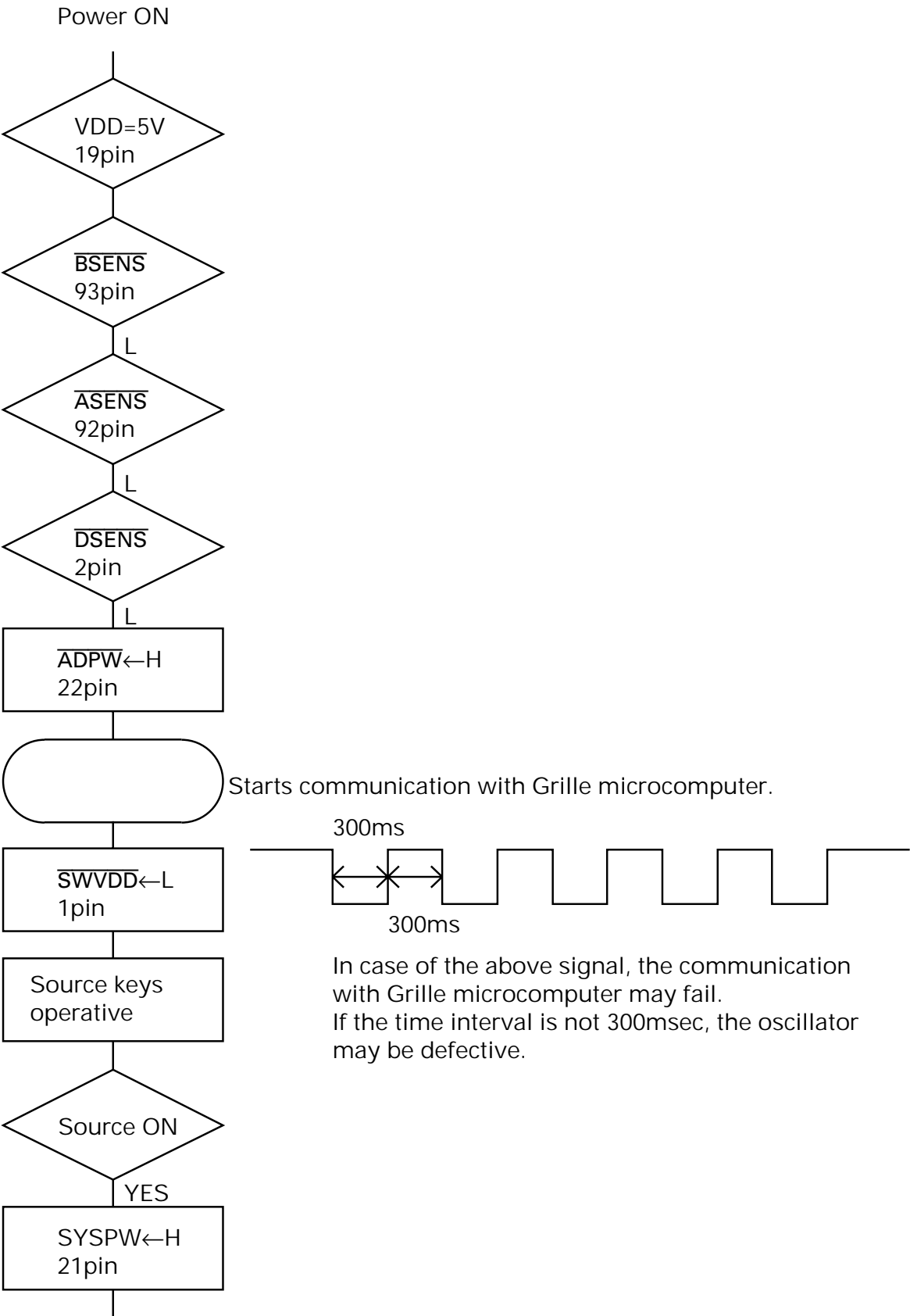


7.2.2 DISPLAY

● CAW1566(DEH-P5100R/EW),CAW1600(DEH-P5100R-B/EW),CAW1573(DEH-P5100R-W/EW)



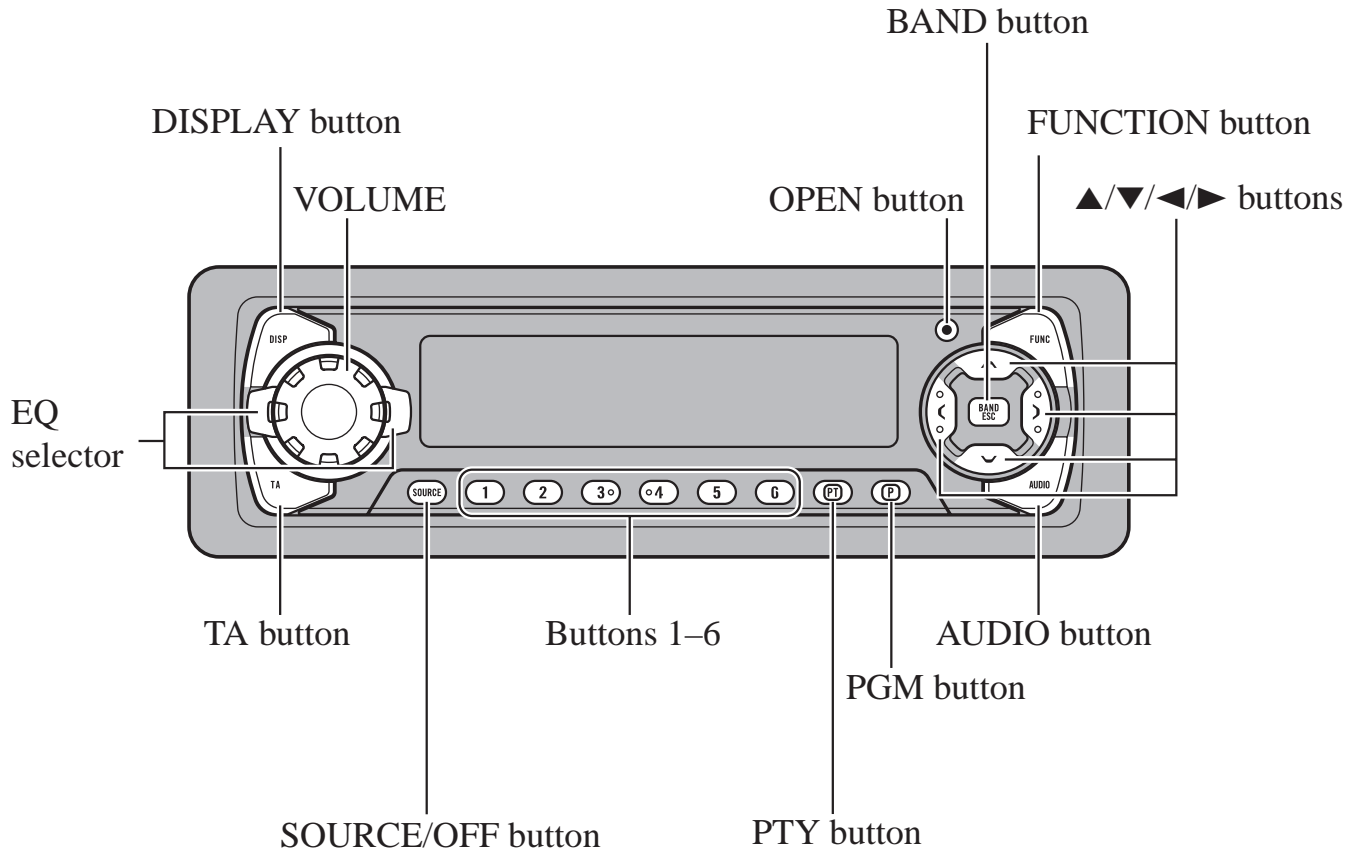
7.3 OPERATIONAL FLOW CHART



8. OPERATIONS AND SPECIFICATIONS

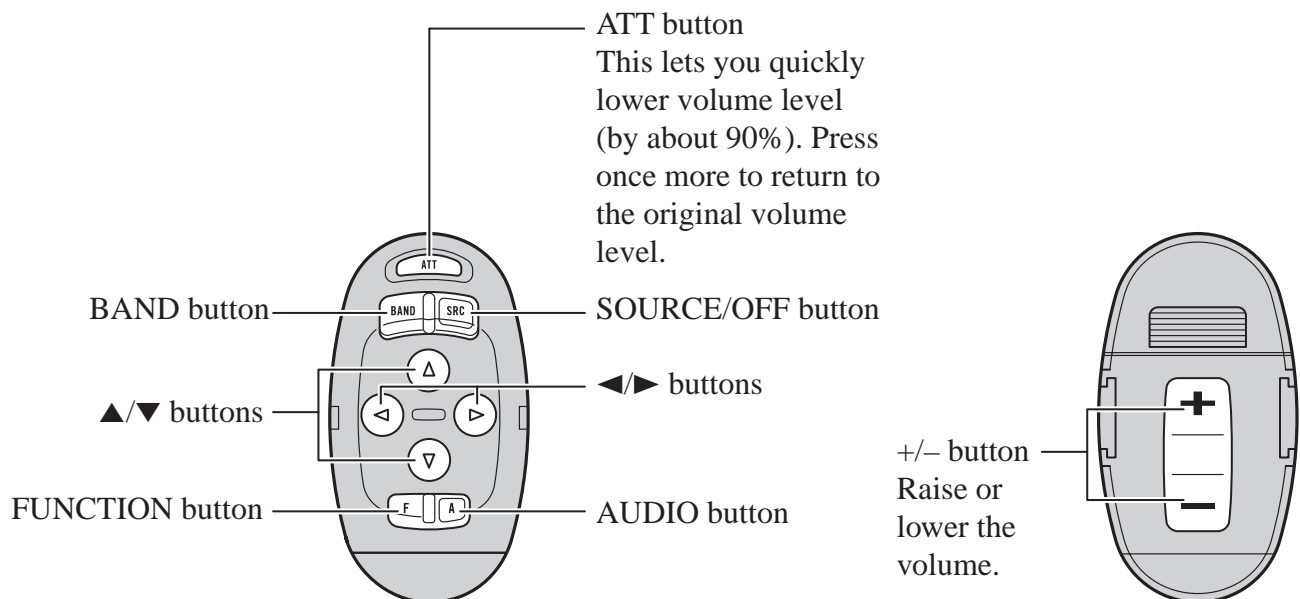
8.1 OPERATIONS

Head Unit



Steering Remote Controller (CD-SR77)

The steering remote controller (CD-SR77) enabling remote control of the head unit is sold separately. Operation is the same as when using buttons on the head unit.



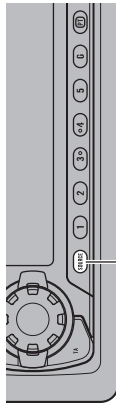
To Listen to Music

The following explains the initial operations required before you can listen to music.

Note:

- Loading a disc in this product.

1. Select the desired source. (e.g. Tuner)



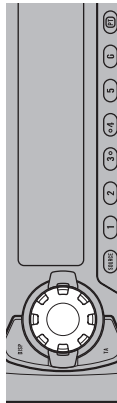
Each press changes the Source ...

Each press of the SOURCE/OFF button selects the desired source in the following order:
Built-in CD player → TV → Tuner → DAB (Digital Audio Broadcasting) → Multi-MD player → Multi-CD player → External Unit → AUX

Note:

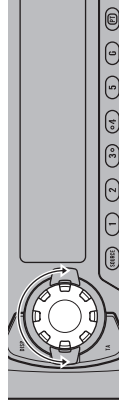
- External Unit refers to a Pioneer product (such as one available in the future) that, although incompatible as a source, enables control of basic functions by this product. Only one External Unit can be controlled by this product.
- In the following cases, the sound source will not change:
 - * When a product corresponding to each source is not connected to this product.
 - * When no disc is set in this product.
 - * When no magazine is set in the Multi-CD player.
 - * No disc is set in the Multi-MD player.
 - * When the AUX (external input) is set to OFF.
- When this product's blue/white lead is connected to the car's Auto-antenna relay control terminal, the car's Auto-antenna extends when this product's source is switched ON. To retract the antenna, switch the source OFF.

2. Extend the VOLUME forward.



When you press the VOLUME, it extends forward so that it becomes easier to roll. To retract the VOLUME, press it again.

3. Raise or lower the volume.

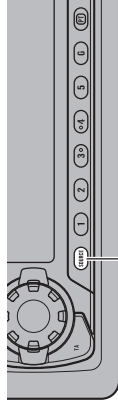


Rolling the VOLUME changes the volume level.

Note:

- Roll clockwise to raise the volume level.
- Roll counterclockwise to lower the volume level.

4. Turn the source OFF.



Hold for 1 second

Basic Operation of Tuner

This product's AF function can be switched ON and OFF. AF should be switched OFF for normal tuning operations.

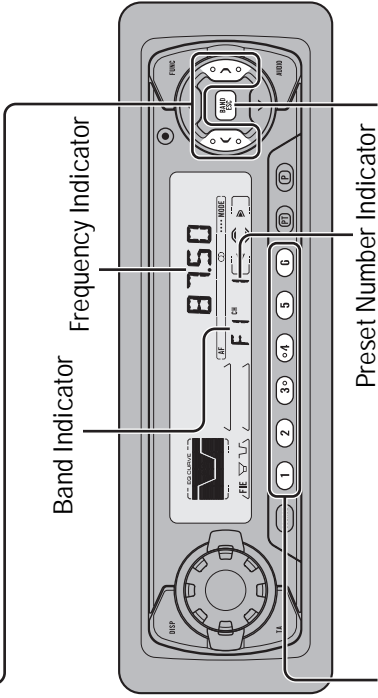
Manual and Seek Tuning

- **You can select the tuning method by changing the length of time you press the ◀▶ button.**

Manual Tuning (step by step)	0.5 seconds or less
Seek Tuning	0.5 seconds or more

Note:

- If you continue pressing the button for longer than 0.5 seconds, you can skip broadcasting stations. Seek Tuning starts as soon as you release the button.
- Stereo indicator "Ⓢ" lights when a stereo station is selected.



Preset Tuning

- **You can memorize broadcast stations in buttons 1 through 6 for easy, one-touch station recall.**

Preset station recall	2 seconds or less
Broadcast station preset memory	2 seconds or more

Note:

- Up to 18 FM stations (6 in F1 (FM1), F2 (FM2) and F3 (FM3)) and 6 MW/LW stations can be stored in memory.
- You can also use the ▲ or ▼ buttons to recall broadcast stations memorized in buttons 1 through 6.

Basic Operation of Built-in CD Player

Switching the Display

Each press of the DISPLAY button changes the display in the following order:
Playback mode (Elapsed play time)
→ Disc Title

Note:

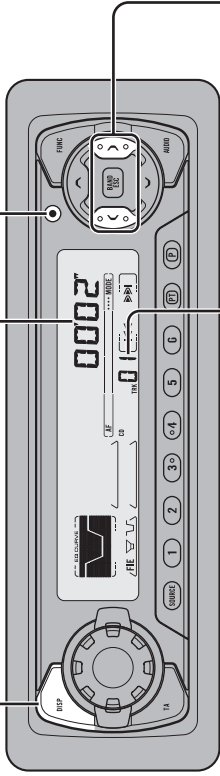
- If you switch displays when disc titles have not been input, "NO TITLE" is displayed.

Open

Note:

- Use to open the front panel when loading or ejecting a CD. (The illustration on the right shows the front panel open.)

Play Time Indicator



Track Search and Fast Forward/Reverse

- **You can select between Track Search or Fast Forward/Reverse by pressing the ◀▶ button for a different length of time.**

Track Search	0.5 seconds or less
Fast Forward/Reverse	Continue pressing

Note:

- If a disc cannot be inserted fully or playback fails, make sure the recorded side is down. Press the EJECT button and check the disc for damage before reinserting it.
- If a CD is inserted with the recorded side up, it will be ejected automatically after a few moments.
- If the Built-in CD player cannot operate properly, an error message (such as "ERROR-14") appears on the display. Refer to "Built-in CD Player's Error Message".
- The Built-in CD player is not equipped with CD TEXT function.
- A CD TEXT disc is a CD featuring recorded text information such as Disc Title, Artist Name and Track Title.

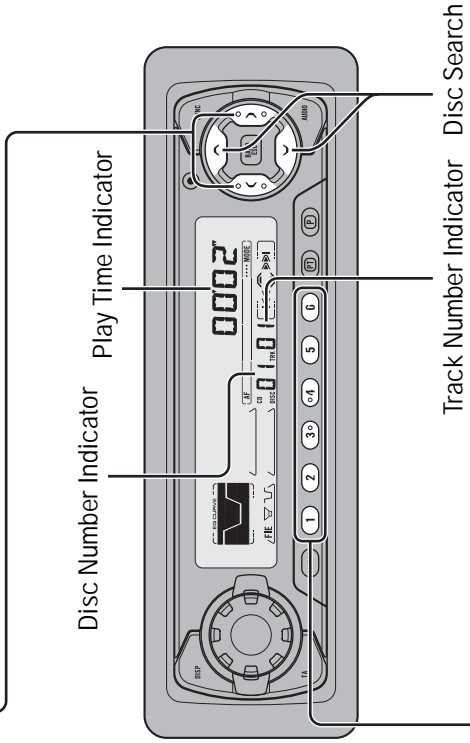
Basic Operation of Multi-CD Player

This product can control a Multi-CD player (sold separately).

Track Search and Fast Forward/Reverse

- You can select between **Track Search or Fast Forward/Reverse** by pressing the **◀/▶** button for a different length of time.

Track Search	0.5 seconds or less
Fast Forward/Reverse	Continue pressing



Disc Number Search (for 6-Disc, 12-Disc types)

- You can select discs directly with the 1 to 6 buttons. Just press the number corresponding to the disc you want to listen to.

Note:

- When a 12-Disc Multi-CD Player is connected and you want to select disc 7 to 12, press the 1 to 6 buttons for 2 seconds.

Note:

- The Multi-CD player may perform a preparatory operation, such as verifying the presence of a disc or reading disc information, when the power is turned ON or a new disc is selected for playback. "READY" is displayed.
- If the Multi-CD player cannot operate properly, an error message such as "ERROR-14" is displayed. Refer to the Multi-CD player owner's manual.
- If there are no discs in the Multi-CD player magazine, "NO DISC" is displayed.

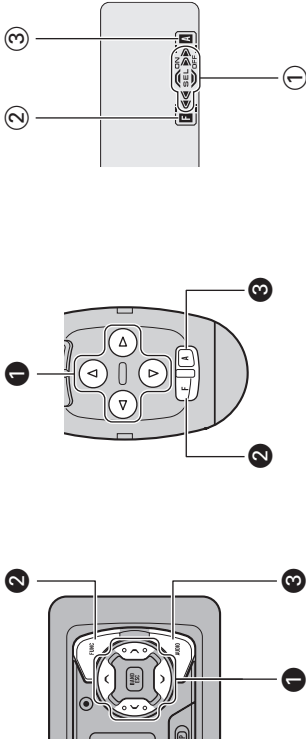
Corresponding Display Indications and Buttons

This product's display features Key Guidance Indicators. These light to indicate which of the **▲/▼/◀/▶**, **FUNCTION** and **AUDIO** buttons you can use. When you're in the **Function Menu**, **Detailed Setting Menu**, **Initial Setting Menu** or **Audio Menu**, they also make it easy to see which **▲/▼/◀/▶** buttons you can use to switch functions **ON/OFF**, switch repeat selections and perform other operations. Indicator and corresponding buttons are shown below.

■ Head Unit

■ Steering Remote Controller

■ Display



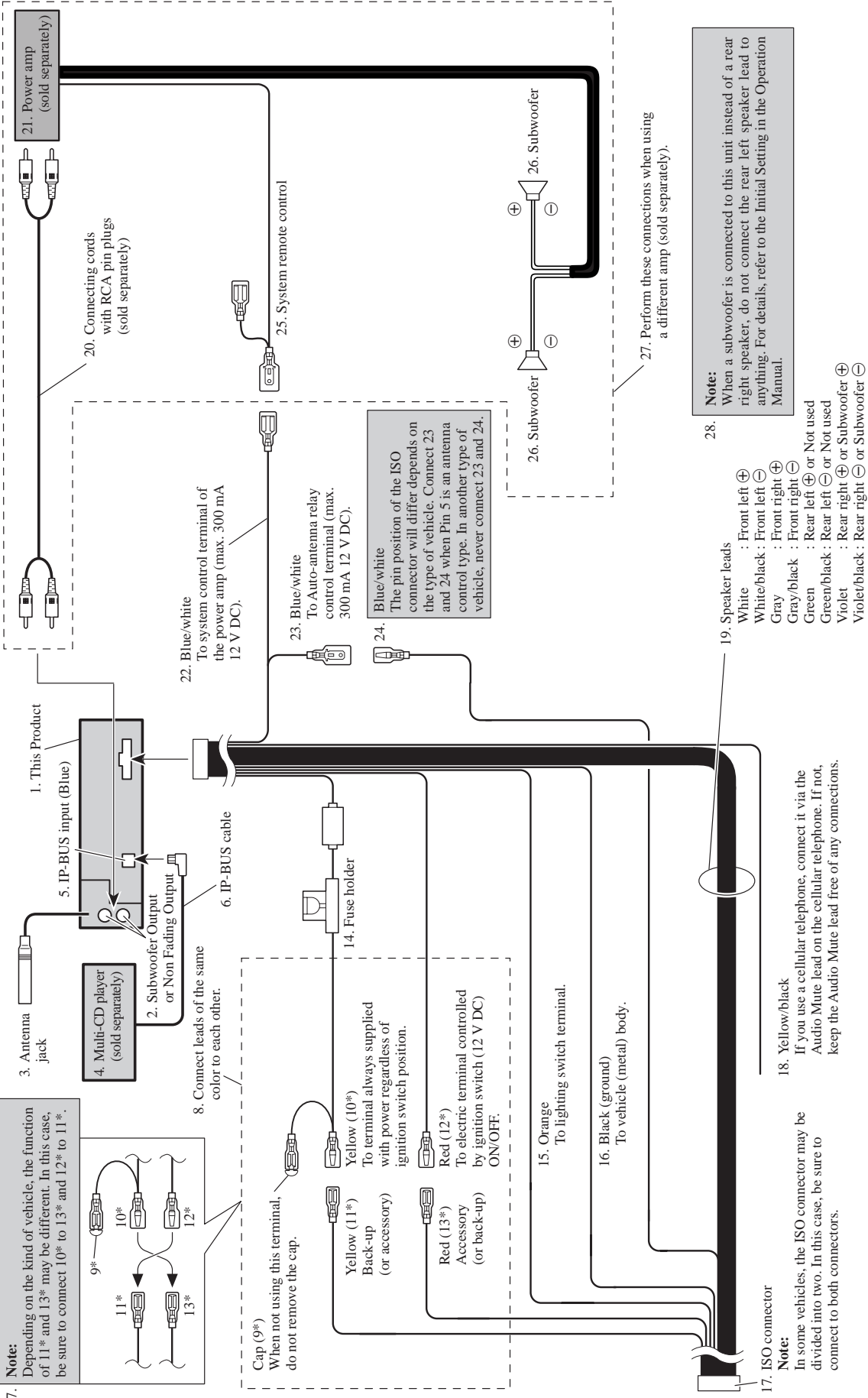
When ① is lit in the display, perform appropriate operations with the ① buttons.

When ② is lit in the display, it indicates that you are in the **Function Menu**, **Detailed Setting Menu** or **Initial Setting Menu**. You can switch between each of these menus and between different modes in the menus using button ② on the head unit or steering remote controller.

When ③ is lit in the display, it indicates you are in the **Audio Menu**. You can switch between modes in the **Audio Menu** using button ③ on the head unit or steering remote controller.

● CONNECTION DIAGRAM

■ When not connecting a rear speaker lead to a Subwoofer



8.2 SPECIFICATIONS

General

Power source 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system Negative type
Max. current consumption 10.0 A
Dimensions
 (mounting size) 178 (W) × 50 (H) × 157 (D) mm
 (front face) 188 (W) × 58 (H) × 19 (D) mm
Weight 1.7 kg

Amplifier

Maximum power output 45 W × 4
 45 W × 2 ch/4 Ω + 70 W × 1 ch/2 Ω (for Subwoofer)
Continuous power output 27 W × 4
 (DIN45324, +B = 14.4 V)
Load impedance
 4 Ω (4 – 8 Ω [2 Ω for 1 ch] allowable)
Preout maximum output
 level/output impedance 2.2 V/1 kΩ
Equalizer (3-Band Parametric Equalizer)
 (Low) Frequency: 40/80/100/160 Hz
 Q Factor: 0.35/0.59/0.95/1.15
 (+6 dB when boosted)
 Gain: ±12 dB
 (Mid) Frequency: 200/500/1k/2k Hz
 Q Factor: 0.35/0.59/0.95/1.15
 (+6 dB when boosted)
 Gain: ±12 dB
 (High) Frequency: 3.15k/8k/10k/12.5k Hz
 Q Factor: 0.35/0.59/0.95/1.15
 (+6 dB when boosted)
 Gain: ±12 dB

Loudness contour
 (Low) +3.5 dB (100 Hz), +3 dB (10 kHz)
 (Mid) +10 dB (100 Hz), +6.5 dB (10 kHz)
 (High) +11 dB (100 Hz), +11 dB (10 kHz)
 (volume: –30 dB)

HPF
 Frequency 50/80/125 Hz
 Slope –12 dB/oct.
Subwoofer output
 Frequency 50/80/125 Hz
 Slope –18 dB/oct.
 Gain ±12 dB

CD player

System Compact disc audio system
Usable discs Compact disc
Signal format Sampling frequency: 44.1 kHz
 Number of quantization bits: 16; linear
Frequency characteristics 5 – 20,000 Hz (±1 dB)
Signal-to-noise ratio 94 dB (1 kHz) (IEC-A network)
Dynamic range 92 dB (1 kHz)
Number of channels 2 (stereo)

FM tuner

Frequency range 87.5 – 108 MHz
Usable sensitivity 11 dBf
 (1.0 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity 16 dBf
 (1.7 μV/75 Ω, mono)
Signal-to-noise ratio 70 dB (IEC-A network)
Distortion 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response 30 – 15,000 Hz (±3 dB)
Stereo separation 40 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range 531 – 1,602 kHz (9 kHz)
Usable sensitivity 18 μV (S/N: 20 dB)
Selectivity 50 dB (±9 kHz)

LW tuner

Frequency range 153 – 281 kHz
Usable sensitivity 30 μV (S/N: 20 dB)
Selectivity 50 dB (±9 kHz)

Note:
• Specifications and the design are subject to possible modification without notice due to improvements.